Madras Information

AUGUST '66 Price 20 P

MADRAS INFORMATION

Annual Subscription .. Rs. 2·25
Half-yearly Subscription. Rs. 1·12
Single copy .. .. 20 Paise.

Subscription to MADRAS INFORMATION may be paid in cash, by Money Order, by Indian Postal Order or by Cheque drawn on any bank in Madras in favour of and addressed to the Director of Information and Publicity, Madras-9.

Subscription may also be remitted in local treasuries to the credit head "XLIX—Stationery and Printing—Sale of Gazettes and other Government Publications and Secretariat Presses," and the chalan should be sent to the Director of Information and Publicity for reference and record.

Advertisement rates may be had on request.

Telephone Nos.
Advertisements, Subscriptions and General Enquiries—29111—Extn. 96
Editorial—29111—Extn. 52.

NOTICE TO SUBSCRIBERS

The subscribers of "Madras Information", official and non-official are requested to intimate urgently the change of their addresses, and reports, if any, regarding non-receipt of issues of "Madras Information" if they are not delivered to them before the 20th of each month in writing in the **first instance** to the POST MASTERS, **at their end** under intimation to the Director of Information and Publicity, Public (Information and Publicity) Department, Madras-9, and the Director of Stationery and Printing, Madras-1.

2. Copies of all issues of "Madras Information" are being regularly sent to subscribers **direct** from the Government Press, Madras-1, as soon as the publication is brought out. The subscribers are therefore requested to make enquiries at the local post office at their end whenever packets containing the issues are not received by them on or before the 20th of every month.

3. The subscribers of "Madras Information" are requested to QUOTE THEIR SUBSCRIPTION NUMBERS in all their letters and in the coupons of Money Orders addressed to the Director of Information and Publicity, Public (Information and Publicity) Department, Madras-9, and the Director of Stationery and Printing, Madras-1, to facilitate easy reference and for taking prompt action thereon.

All communications should be addressed to

THE DIRECTOR OF INFORMATION AND PUBLICITY
FORT ST GEORGE, MADRAS-9.

377

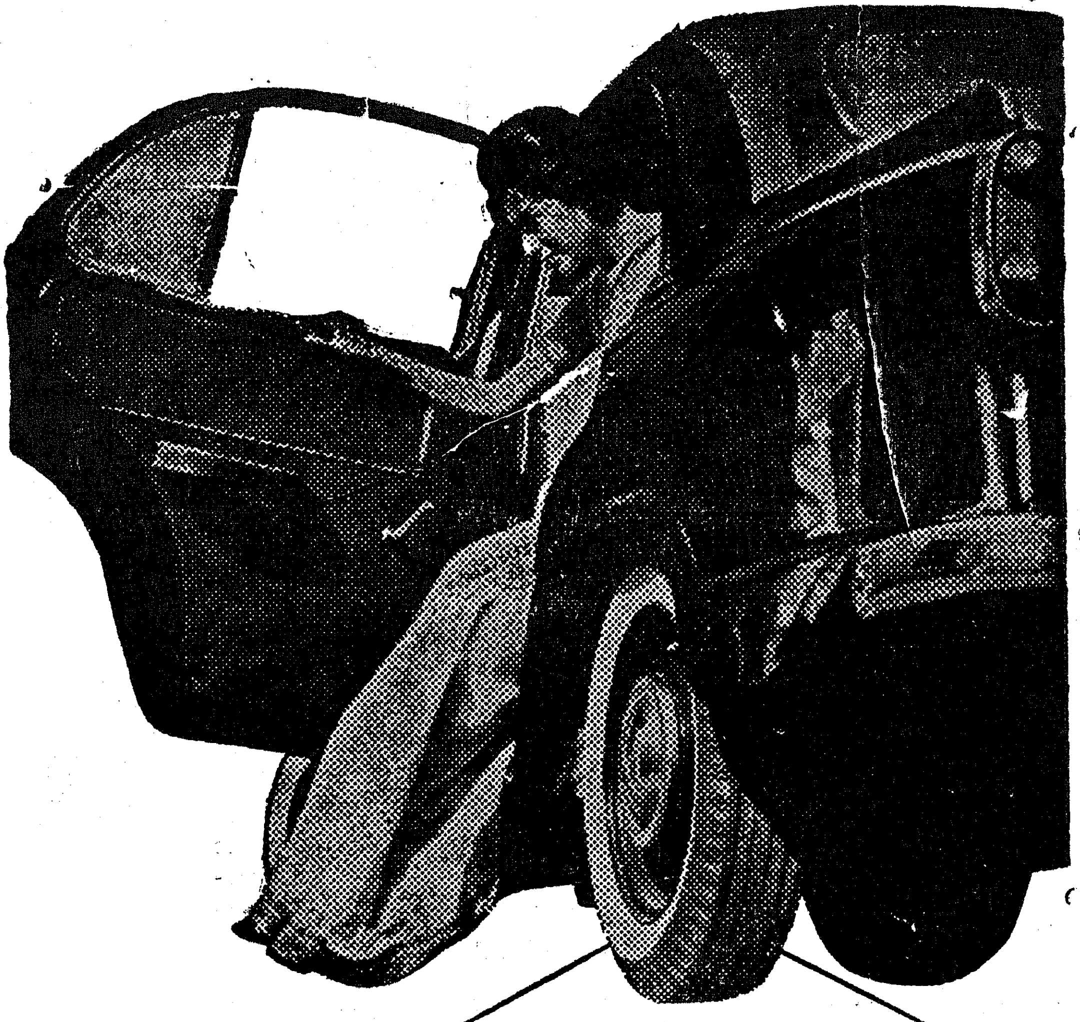
1 0 AUG

MADRAS INFORMATION

Vol. XXI AUGUST 1966 No. 8

CONTENTS

	PAGE
1. Means and Ends	3
2. Fish to Control Malaria .. .. .. *—By V. D. Spurgeon, Assistant Director of Fisheries (Information and Statistics) Madras.*	4
3. Cultural Programme to promote Small Savings ..	7
4. Paddy—A.D.T. 27	8
5. Economics of Co-operative Farming	9
6. Deep Litter Poultry House .. .. .. *—By Dr. K. V. Parthasarathi and Dr. M. P. Viswanathan, Poultry Research Station, Madras.*	11
7. Thengumarahada Co-operative Society	15
8. The Petroleum Industry ✓ .. .. .. *—By B. Shivaraman, Chief Production Engineer, I.O.C., Gauhati Refinery.*	17
9. Family Planning Programme	21
10. The Tiruchy Ordnance Factory .. .. *—By R. M. Mazumdar, Director-General, Ordnance Factories.*	23
11. The Story of Vijayanta	25
12. Mahatma Gandhi Centenary in 1969	26
13. Progress of Small Industries in Madras State ..	27
14. Scientific Research in India	29
15. Service Prospects of Rural Development Staff ..	32
16. Diets Around the World .. .. .. *—By Shanti Sudarsanam, Project Nutrition Officer, Directorate of Rural Development, Madras.*	34
17. Co-operative Spining Mills in Madras State ..	36



New tyre or TVS retread?

Only the owner knows!

As a prudent car owner you would like to get the most out of your tyres by retreading them. But you wouldn't like to use a tyre that looks obviously a retread. **TVS retreads** look like new, perform like new—and only you would know that **they are retreads. TVS - the largest retreaders in India**

SUNDARAM INDUSTRIES PRIVATE LIMITED

(A member of the TVS group of companies)

Bangalore Coimbatore Madras Pudukkottai Secunderabad Tirunelveli

Independence Day Feature

279

MEANS AND ENDS

They say, "means are after all means". I would say, "means are after all everything". As the means so the end. There is no wall of separation between the means and the end. Indeed the Creator has given us control (and that too very limited) over means, none over the end. Realization of the goal is in exact proportion to that of the means. This is a proposition that admits of no exception.

* * * * *

The means may be likened to a seed, the end to a tree; and there is just the same inviolable connection between the means and the end as there is between the seed and the tree.

* * * * *

Though you have emphasized the necessity of a clear statement of the goal, but having once determined it, I have never attached importance to its repetition. The clearest possible definition of the goal and its appreciation would fail to take us there, if we do not know and utilize the means of achieving it. I have, therefore, concerned myself principally with the conservation of the means and their progressive use. I know if we can take care of them, attainment of the goal is assured. I feel too that our progress towards the goal will be in exact proportion to the purity of our means.

This method may appear to be long, perhaps too long, but I am convinced that it is the shortest.

—*MAHATMA GANDHI*

I think also that there is always a close and intimate relationship between the end we aim at and the means adopted to attain it. Even if the end is right, if the means are wrong, that will vitiate the ends or divert it into a wrong direction. Means and end are thus intimately and inextricably connected and cannot be separated. That indeed has been the lesson of old taught us by many great men in the past but unfortunately it is seldom remembered.

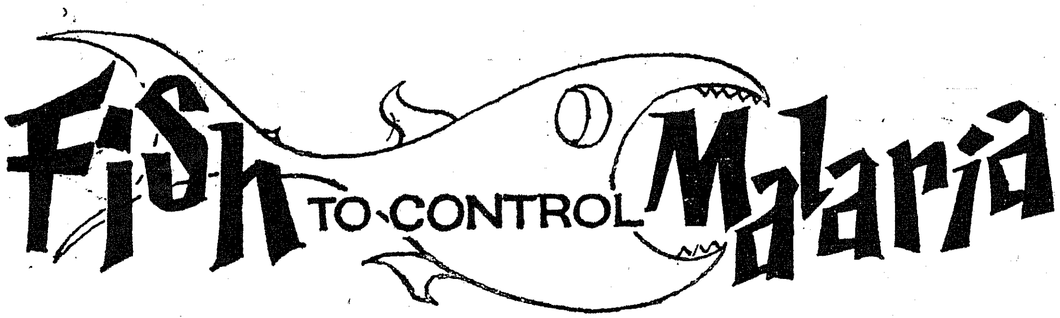
I am venturing to place some of these ideas before you not because they are novel but because they have impressed themselves upon me in the course of my life which has been spent in alternating periods of

The great leader of my country, Mahatma Gandhi, under whose inspiration and sheltering care I grew up, always laid stress on moral values and warned us never to subordinate means to ends. We are not worthy of him and yet to the best of our ability we try to follow his teachings. Even to the limited extent to which we could follow his teachings, it yielded rich results.

After a generation of intense struggle with a great and powerful nation, we achieved success and perhaps the most significant part of that achievement, for which credit is due to both parties, was the manner of it. History hardly affords any parallel to the solution of such a conflict in a peaceful way followed by friendly and co-operative relations. It is astonishing how rapidly the bitterness and ill-will between the two nations have faded away giving place to co-operation, and we in India have decided of our own free will to continue this co-operation as an independent nation.

I would not presume to offer advice to other and more experienced nations in any way. But may I suggest for your consideration that there is some lesson in India's peaceful revolution which might be applied to the larger problems before the world to-day? That revolution demonstrated to us that physical force need not necessarily be the aim of man's destiny and that the method of waging a struggle and the way of its termination are of paramount importance. Past history shows us the important part that physical force has played. But, it also shows us that no such force can ultimately ignore the moral forces of the world and if it attempted to do so, it does so at its peril. To-day this problem faces us in all its intensity because the weapons that physical force has at this century differ from primitive barbarism only in the destructive weapons that man's ingenuity has invented for man's destruction? I do believe, in accordance with my Master's teachings, that there is another way to meet this situation and solve the problem that faces us. I realize that a statesman or a man who has to deal with public affairs cannot ignore realities and cannot act in terms of abstract truth. His activity is always limited. Nevertheless basic truth remains the truth and is always to be kept in view and, as far as possible, it should influence our actions. Otherwise we get caught up in a vicious circle of evil when one evil action leads to another.

Fisheries Week Feature



V. D. SPURGEON,
Assistant Director of Fisheries (Information and Statistics), Madras.

This article is published in connection with the Second Fisheries Week to be celebrated in the third week of this month.

Usually the mere mention of the word *fish* conjures up in the mind of the public all unpleasant associations of *foul odour, flies* and *filth.* The *fishing* profession also is looked down upon as mean; and *fish market* is synonymous of *stink, slime, snot* and *slang.*

But, thanks to the planned efforts of the Fisheries Department. The public are slowly weaned to better opinion about *fish, fishing industry* and *fish* trade. There are alround indications about the increasing awareness about fish's immense service to Mankind not only in *dietetics* but also in *therapeutics.*

Fish *protein* is the cheapest that poor folk could afford and it is the easiest to digest and assimilate by even the invalids, infants and the convalescing. *Fish* oil is rich in vitamins A and D which are vital during periods of pregnancy, lactation and recuperation and for different diseases.

Controlling malaria

Apart from the aforesaid food and medicinal values, *fish* can play a vital role in controlling Man's diseases that are spread to us through the medium of water.

Malaria is a scourage that is dreaded world over. *Filaria* is a curse that plagues the tropics. *Guineaworm* disease is yet another evil that befalls humanity at large. All these three malignant maladies are prevalent over vast areas of the globe.

These three diseases are transmitted to us by creatures that live and multiply in water. *Fish* also lives in water. So Man has found out that certain varieties of *fish* could be used to kill these *disease carriers* while they are yet in water and thus control or eradicate the evils.

We come in contact with water too frequently Daily we drink nearly one pint of water. Besides we bathe in water, wade through water or live near water- or the other kind of water-borne diseases. There is also another danger through water. Water is the breeding ground for the prolific obnoxious biwinged pest, namely mosquito.

The mosquito belongs to the class of animals called "*insecta.*" In *insecta* the mosquito belongs to the family *calliciae* which has 1,000 species. We are concerned with only two kinds of mosquitos, viz., *anophelines* and the *culicins.* The group, to which anophelines belong comprises of 100 species of which unfortunately $\frac{1}{8}$ occurs in India.

The mosquito has to pass through three stages of development before it emerges as an adult winged insect. All the three preliminary stages develop in water as is well known.

Suppose a female mosquito at the commencement of the year in January lays 100 eggs, that multiply to 488,281,250,000,000,000 mosquitos, in December of the same year. It is at such terrific rate the mosquitos increase and multiply. When we stop to think for a moment that malignant maladies like *Filaria, malaria, dengue fever,* etc., spread through mosquito, we simply dread the alarming fecundity with which mosquito population increases day by day and shudder at the tremendous risk we are daily exposed to.

The egg

The disease caused through mosquito bite takes a large toll of human life in the tropics. Especially in India with poverty eating away the masses to their very vitals the annual mortality seems to be round about two millions. Apart from causing death to hundreads of thousands, mosquito is a source of great unhappiness to Man. With the setting of sun in the west, mosquitos emerge out of

with an annoying, buzzing noise to suck the blood of innocent beings. Pain, loss of some blood, sleeplessness and diseases are caused.

The female mosquito lays its eggs on the water surface. The egg is also known as the ovum. The *anopheles* lays its eggs under water which are, therefore, more difficult to detect. The *culex* on the other hand, collects the eggs so laid together with its hind legs so as to join them in the shape of a raft. The raft is called the egg raft.

The larva which emerges out of egg is cruciform maggot without true legs. It is also called the wriggler.

This is the third stage of mosquito life. The pupa is also known as the nymph. Though this stage is completely restive it passes through great physiological activity. The pupa is comma shaped. " Imago " emerges furnished with wings and legs adapted for a life in the air.

When mosquito bites an infected man, it drinks a small quantity of his blood. With that blood *sporo zoites* make their way into the salivary glands of the mosquito, then the mosquito is ready to infect a healthy man. This process takes to 10 to 12 days to complete the normal course.

Development of parasite in man

When there is multiplication of parasites, they attack fresh red corpuscles in the blood and the patient experiences rise of temperature and suffers from fever.

To exterminate mosquitoes on a large scale in the winged stage is difficult. The best mode of killing them is to crush them in their cradle.

So the inexpensive, effective and natural cure for this complaint is to make use of mosquito larva's natural enemy to combat them. This process is called *Biological controlling process.* Certain minute fishes with upturned mouth are partial to larval forms only. So by growing them in all the places of waters we dispense with expensive chemicals and staff in a country like ours with proverbial poverty.

The fishes used should be *small, hardy, active* and *prolific.* Or top-water tiny fishes are useful in this regard. Another difficulty in the chemical process is that drinking water reservoirs cannot be treated.

It is obvious that the smaller the species the better it will be for feeding on such minute forms *of life as mosquito larvae* though the fry of many larger fishes devour these insects readily, and the adult soon gives up this diet in favour of larger food more suited to its size. The most efficient larvicides are, therefore, those that are small, hardy and carnivorous and feed at the surface of water.

The larvicidal fishes are freely offered to us by nature. All streams and rivers are natural breeding grounds of these tiny fishes. Paddy flats and supply channels also contain all larvivorous fishes. Wherever these fishes are found in plenty it is observed that mosquito nuisance is nil or negligible. Therefore one should not treat the tiny fishes as trifling and allow them to be stranded and killed in drying fields, channels, etc. Some people collect them by basket-traps and clothes. This meaningless annihilation of helpful fishes should be stopped by suitable legislation. The State should transplant them in places where there is no natural stocking. Besides, the fish farms run by the Fisheries Department at Chetput (Madras), Poondi, Mettur, Chingleput, Bhavanisagar, Vellore and other places rear and supply them to the needy public.

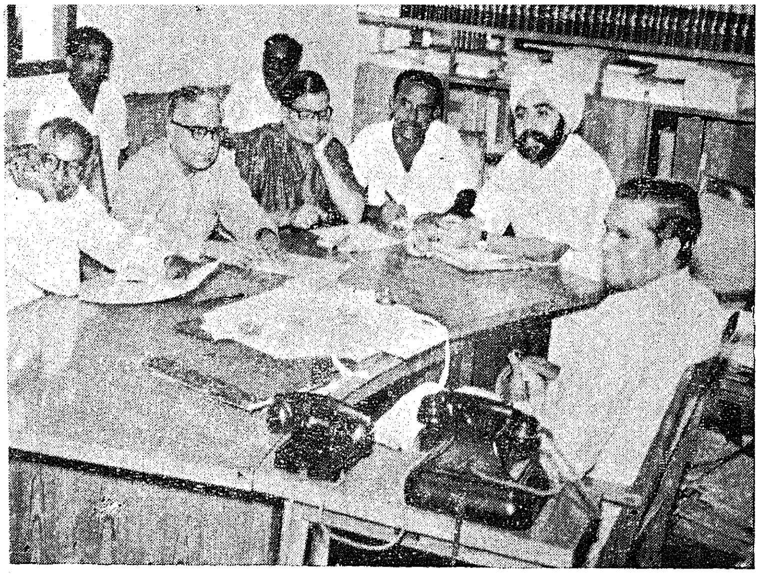
Killing the mosquito in the cradle stops other kinds of diseases as well. To mention one other well known and dreadful disease is that of *Filariasis.* This is known among the lay as " Elephant-leg disease. This is a common ailment in Kancheepuram, Thanjavur, Kumbakonam and in Madras City. The culprit for spreading this incurable disease is not the *Anopheles* but another kind of mosquito called the *Culex-anopheles* lives in clear water and *culex* thrives in dirty waters. Therefore, inside City limits, *Culex* abounds in drainages. If fish is grown in certain pieces of water where *culex* also multiplies then in that area *malaria* and *elephantiasis* will disappear altogether.

Fish does not kill mosquito larvae alone. It also kills a creature called " Cyclops ". This is a tiny *crustacean* playing the part of an intermediate host for another dreadful tropical disease called the *guinea-worm disease.*

Guinea worm disease

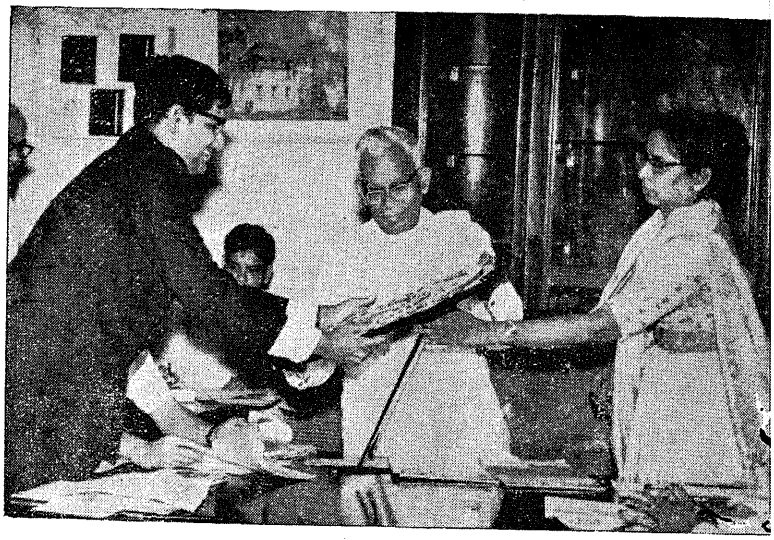
When the *Guinea-worm* infected " Cyclops " is swallowed by man, he gets the disease. The person suffering from *guinea-worm* ulcers when he wades in water either for a bath, or to take water in a pot, the gravid female *guinea-worm* present in the ulcer ejects a milky fluid which is full of *guinea-worm* embryos. These embryos of *guinea-worm* are devoured by the single-eyed translucent *cyclops.* When water containing such *cyclops* is drunk by healthy persons, these cyclops get killed by the gastric juice of the stomach and the *guinea-worm* embryos develop in the intestines of man. After sometime the malady starts. The female makes its way to the cutaneous tissues which are likely to come in contact with water frequently like the knee and ankle and in the case of water-carriers the shoulders also. Certain larvicidal fishes like *Barbus dorsalis, megalops, byprinoids, Etroplus maculatus* and *Ambassis ranga* eat away these *cyclops.* So it is good to introduce these fishes also into step wells and other waters in localities where *guinea-worm* disease is prevalent.

The Fisheries Department is doing its best in stocking all fallow and derelict water sources throughout the State in an all out effort to annihilate mosquitos and eradicate water borne diseases.



Sri G. Bhuvarahan, Minister for Information and Publicity, is discussing with the pressmen at a press conference on National Savings held at his Chambers

Sri M. Bhaktavatsalam, Chief Minister, presenting State Awards for best performance under Small Savings collections during 1965-66 to the Collector of Salem at a function held in Secretariat on 4th July 1966



Sri M. Bhaktavatsalam, Chief Minister, presenting the State Awards for best performance under Small Savings collections during 1965-66 to the Collector of Dharmapuri at a function held in Secretariat on 4th July 1966

(1) 283

Cultural Programme to Promote Small Savings

The year 1965–66 saw the record collections in Small Savings in Madras State. The total collections reached 14·7 crores under all securities.

While there was a decline in the sale of postal certificates all over India by about 75 per cent, this State's record increased over 200 per cent in the sale of these securities. The per capita collection in the State under Small Savings is in the vicinity of Rs. 4 and this compares favourably with the all India per capita collection of Rs. 3·35. The performance in all the Districts have been very encouraging.

To place all the Districts in a satisfactory position in the matter of Small Savings collections from the early part of this year, some of the Districts have started the special campaign for Small Savings collection. In Madras City, to boost up Small Savings collection an attractive cultural programme is proposed to be conducted on 14th August 1966 in the Nehru Stadium. The admission to this programme will be by way of investments in Small Savings Securities duly repayable with interest on maturity and a very nominal gate fee. The rates are given below :—

Rates of admission.

'A' First Class—

(i) Admission by Cumulative Time Deposit account of Rs. 100 or above ;

or

(ii) National Savings Certificate (Ist Issue) for the value of Rs. 1,000, and gate collection Rs. 10.

'B' Second Class—

(i) Admission by Cumulative Time Deposit account of Rs. 50 or above but less than Rs. 100

or

(ii) National Savings Certificate (Ist Issue) for the value of Rs. 500 and gate collection Rs. 5.

'C' Third Class—

(i) Cumulative Time Deposit account of Rs. 10 or above ;

or

(ii) National Savings Certificate Rs. 100 and gate collection Rs. 2.

'D' Fourth Class—

(i) Cumulative Time Deposit account of Rs. 5 or above ;

or

(ii) National Savings Certificate Rs. 50 and gate collection Re. 1.

Students (special)—

(i) Savings Card of Post Office Savings Bank Rs. 5 and gate collection Re. 1.

The President of the South Indian Film Chamber along with many of the important Cine Directors and Artistes is taking an active interest to make the cultural programme a success. The main artistes that may participate are —

1. Padmashri Sri Sivaji Ganesan.
2. Sri M. G. Ramachandran.
3. Sri Gemini Ganesan.
4. Sri Cho.
5. Sri S. S. Rajendran.
6. Sri Nagesh.
7. Sri Thangavel.
8. Smt. Savithri Ganesh.
9. Smt. Padmini.
10. Smt. Saroja Devi.
11. Smt. Devika.
12. Kum. Jayalalitha.
13. Kum. K. R. Vijaya.

The proposal at present is to stage a few interesting short plays prepared by Sri Sridhar and Sri Cho. There will be a music entertainment by Mellisaimannan Sri Viswanathan and Thirai Isai Thilakam Sri Mahadevan supported by the popular play-back singers. It is also proposed to have dance recitals by Smt. Padmini and Kumari Jayalalitha. The cultural programme is expected to be one of the rare shows ever put on in Madras.

The Small Savings Department expects about 30,000 people to enjoy the cultural programme resulting in a net collection of Rs. 1 crores for small savings in the City.

PADDY—ADT 27

ADT-27 is a Japonica-indica cross between Norin 8 and GEB-24. This is a high fertiliser-responsive and fairly non-lodging strain. The grain is fine and the rice is white. It tillers well. The cooking quality of rice is also good.

Season—Kuruvai or Kar or Swarnavari and Navarai—

Kuruvai—From June to October.

Swarnavari—From May to September.

Navarai—From January to April.

Seed-rate.—Use 16 kg. of seeds per acre.

Seed-treatment.—Treat the seeds with organo mercuric compound at the rate of 2 gm. per kg. of seed.

Nursery.—Twelve cents of nursery are necessary to transplant an acre. Plough the nursery area well and bring to a fine tilth. Apply 1½ to 2 cartloads of Farm Yard Manure or Compost. Form 12 beds of one cent each, i.e., each bed should be of 54 feet long and 8 feet broad. Sow sprouted seeds at the rate of 1½ kg. per cent. If the growth is not optimun, apply ammonium sulphate at ½ kg. per cent, 10 days before pulling out seedlings. Semi and dry nursery is preferred.

Age of seedlings.—Pull out the seedlings between 24th and 26th day of sowing.

Main field Preparation.—Pull out green manure, spread and plough or plough 'isnitu' the green manure depending on the type of green-manure plant grown. Use Turmese setturn or green manure trampler for trampling in green manure. If cage-wheel tractor is used, plough twice cross wise and level the puddle with levelling board.

A view of ADT-27 paddy field

Transplanting.—Transplant the seedlings adopting a spacing of 8″ × 6″ for clayey soils and 8″ × 4″ for sandy soils. Plant 2 seedlings per hole.

Manures and Manuring.—Apply 10 cartloads of Farm Yard Manure or compost or 2,300 kg. of green manure per acre, Apply 21 kg. of P and 14 kg. of $K^{2}O$ in the last plough. Apply 14 kg. of N before transplanting. Top-dress another 14 kg. of N on the 30th day of transplanting. If adequate quantity of organic manure is not available, apply additional quantity of inorganic fertiliser at the rate of 4 kg. of N. for the deficiency of every 1,000 kg. of green manure or Farm Yard Mnaure or compost.

Fertiliser schedule—

	Basal dressing.			*Top dressing.*		
	N	P	K	N	P	K
Recommended level (in kg.).	14	21	14	14	0	0
I. Quantity of fertiliser in kg. when used as:						
(i) Ammonium sulphate	70	..	..	70	..	..
or						
Urea	31	..	..	31	..	..
(ii) Super Phosphate.	..	130	..	..	..	..
(iii) Muriate of potash.	..	..	23	..	..	..
II. Standard mixture (6-9-6).	..	233	..	..	70 Am. Sulphate *or* 31 Urea.	
Adopt I or II of the schedule.						

After cultivation.—Intercultivate with rotary hoe on 15th day of transpanting and again on 30th day of transplanting, Weed the crop in rows with hands for clean cultivation.

Plant protection.—Spray 0·025 per cent Parathion i.e., 100 c.c. of Parathion in 200 litres of water or 0·03 per cent Endrin i.e., 200 c.c. of Endrin in 100 litres of water in the nursery a week before pulling seedlings. Spray the transplanted crop of 15 days old with 0·025 per cent Parathion or 0.03 per cent Endrin mixed with 0·06 kg. of copper fungicide per acre. Give the third round of spray as above at the boot-leaf stage, if required.

Harvest.—The crop will come to harvest in 105 days. It yeilds up to 2,500 kg. (5,500 lb.) per acre.

ECONOMICS OF CO-OPERATIVE FARMING

In the context of present-day Indian agriculture, the main justification for co-operative farming lies in its immense possiblities to help and solve the problems of large numbers of small and under-employed farmers in the country. While they constitute a majority of those engaged in agriculture, their holdings account for less than one-sixth of the total cultivated area. The small size of their holdings, fragmented into tiny scattered pieces, makes it difficult for them to effect improvements and adopt scientific methods of cultivation. It is also difficult for them to maks effective use of the technical and financial assistance and several other services offered by the various developmental authorities.

Ecomomic Implications

An obvious solution of the problem would seem to be to consolidate these small holdings and make them more efficient units of farm management. But, since consolidation does not enlarge the size of the holdings and sub-divisions tend to emerge in every generation, the need for co-operative farming becomes imperative.

In simple words, co-operative farming involves the pooling together of uneconomic holdings, un-utilised or under-utilised manpower and other resources, with the primary aim of increasing agricultural production and providing better avenues of gainful employment to those joining in the process. In a way, it is an extension of the system of joint family to agriculture, wherein the land-contributing farmer retains his right to ownership of land but has much greater scope for joint co-operative functioning. The entire transaction is voluntary and has "self-help and mutual aid" as its guiding motto.

Besides pooling all his land within the area of operation of a co-operative farming society, every member contributes to its share capital. This may be in cash, usually Rs. 10 being the value of one share, or in resources like cattle and implements, etc., to be evaluated according to market rates. A portion of the share capital is invested in buying the share of a Central Co-operative Bank to entitle the society to secure loans.

The land of the members is pooled for a period of at least five years to allow the society a fair trial over a period of time. A member can withdraw his land at the end of this period. He may, however, have to accept a different piece of land of equal productivity if his own piece is so situated as to upset the plan of operation of the farm.

A co-operative farming society has to evolve norms for allotment of work, assessment of performance and return for ownership of land and other resources pooled by members. The return for ownership of land can be paid either (i) out of the gross income calculated without deducting the working expenses, or (ii) out of the net income arrived at after deducting all working expenses and other payments like land revenue, interest on capital, depreciation, etc. It can be given in cash or kind, but should not exceed the rent prescribed under the local tenancy law. The balance left after meeting all these charges is the net profit of the society and can be utilised for payment of bonus to members after providing for the necessary reserves.

Provision for Credit

The pooled resources of the members are usually not enough to finance programmes of large-scale production, land improvement and additional employment. It, therefore, becomes necessary for a society to secure financial assistance from other sources like co-operative banks and the developmental agencies of the Government.

Short-term credit (for current farm expenditure) from co-operative banks is related to actual production programme and loans are available on the security of the crop. The societies have to market their farm produce through marketing co-operatives which recover the loan on behalf of banks. Short-term loans from co-operative banks are also available under the crop

loan system which dispenses with the mortgage of land as security and emphasises the credit-worthiness of purpose rather than the land holding status of a person. In this system, the scale of finance is related to the crops grown and is calculated on the basis of the actually cultivated area under different crops and the nature of inputs, etc.

Central co-operative banks in certain States advance medium-term loans for purposes like purchase of draught and dairy cattle and light agricultural implements, construction of wells and installation of small oil engines, etc. It has recently been agreed that medium-term loans to co-operative farming societies should be available without mortgage of land, as in the case of individual members of service co-operatives.

Government Agencies

Efforts are also being made to persuade Land Development Banks to provide long-term loans, for undertaking permanent improvements in land, to co-operative farms.

A co-operative farming society is entitled to get the following types of financial assistance under the co-operative plan.—

(*a*) Share capital contribution equal to the amount raised by members, not exceeding Rs. 2,000 (available to societies in pilot projects only);

(*b*) Medium and long-term loans for land development at the average rate of Rs. 4,000;

(*c*) Assistant for the Construction of a godown-cum-cattle shed Rs. 5,000 (one-fourth of it is to be treated as subsidy and ¾ as loan); and

(*d*) Managerial subsidy spread over a period of 3 to 5 years: Rs. 1,200.

In addition, assistance in the form of medium and long-term loans is also available from the block budget and from the allotment made for the "Grow More Food" campaign and other schemes of agricultureal develoment. A society, which under-takes activities like khadi spinning and weaving or a programme of small-scale industries, can also get financial assistance from organisations like the Khadi and Village Industries Commission and the Industries Departments of the State Governments.

Gadgil Committee's Recommendations

The Committee of Direction under the Chairmanship of Prof. D. R. Gadgil, which reported on the working of co-operative farming societies recently, has recommended that loans for land development should not be provided to the societies on an *ad hoc* basis irrespective of the size of the farm but should be related to their area and programmes of development. Grant of land development loans to joint farming societies at Rs. 100 per acre subject to a ceiling of Rs. 20,000 and for collective farming societies at Rs. 150 per acre subject to a ceiling of Rs. 30,000 has been suggested. Another suggestion pertains to the raising of the managerial subsidy to collective farming societies from Rs. 1,200 to Rs. 2,100 over a period of 3 to 5 years.

The Gadgil Committee has also recommended that in order to enable co-operative farming societies to operate on a wider economic base, programmes of agro-industries should form an integral part of the activities undertaken by them.

PRESS COUNCIL ESTABLISHED

The Central Government, have announced the establishment of the Press Council with effect from July 4, 1966.

Sri J. R. Mudholkar, former Judge of the Supreme Court, has taken over as Chairman of the Council. He was nominated by the Chief Justice of India.

The Council will have 25 other members, including two from the Lok Sabha nominated by the Speaker, one from the Rajya Sabha nominated by the Chairman, three with special knowledge or experience in the fields of education, science, literature, law and culture, and 19 from the newspaper profession.

The representatives of the newspaper profession will be nominated by a three-member Committee from the panels of names submitted by newspaper associations. The Committee will consist of the Chief Justice, the Chairman of the Press Council, Sri Mudholkar and Srimathi Lakshmi N. Menon, former Minister of State for External Affairs. Srimathi Lakshmi Menon has been appointed a member of the Committee by the President.

The panels of names for the working jornalists will be invited from the Indian Federation of Working Journalists, the All India Newspaper Editors' Conference and the Press Association, and those for six representatives of newspaper managements and proprietors, from the Indian and Eastern Newspaper Society and the Indian languages newspapers.

It is provided in the Press Council Act that of the 13 working journalists not less than six should be editors who do not carry on the business of management of newspaper, including at least three editors of Indian language newspapers. It is also provided that not more than one person interested in any newspaper or group of newspapers under the same control or management should be nominated to represent working journalists or newspaper management.

In inviting panels of names from the associations concerned, the Committee will give them at least 15 days notice in writing.

Deep Litter Poultry House

Dr. K. V. PARTHASARATHY and Dr. M. P. VISWANATHAN
Poultry Research Station, Madras.

The way in which deep litter poultry houses are constructed is given below, for those who like to use the materials available with them and put the maximum effort to see that the houses are constructed with minimum expenditure.

Details are given stage by stage so as to enable one to complete the construction work without difficulty on the lines approved by experienced poultry breeders.

A shed measuring 10 feet by 10 feet is now taken up for construction and this house with 100 square feet floor space is enough for 33 birds. There can be no compromise in the number of birds put. If you add more number, you will see for your self that the number reduces to about 33 in a few months time.

This statement may be a bit surprising, but it is a fact for, the amount of litter available in such a house, is just enough to take up the droppings from 33 birds, absorb its moisture and let it out, and leave the rest to crumble to powder the litter itself crumbling all the while. This continued process keeps the litter dry, with no smell. and at the same time comfortable and healthy for birds. In addition such a litter regulates the temperature needed for birds.

To begin with, let us take into consideration the materials required for the construction of a house of 10 feet by 10 feet. Four corner posts about 7 feet long

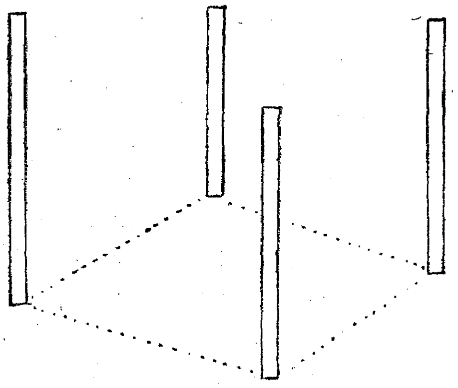


Figure 1

each are necessary and these corner posts may be fixed on the ground with about 2 feet underground. The posts shall stand exactly five feet above the ground. (Figure 1) These posts may be of thick bamboo, casuarina, or any other junglewood, which in your opinion is good enough. If it is of bamboo or casuarina it may be of 4" or 5" in diameter; and it is better to coat tar, to the portion that would go underground. Fill up the pit with sand and brick jelly and ram the same tight.

One post centrally placed is necessary to carry the roof, and this post should be 9 feet above the ground level. (Figure 2) When once you have fixed the 4 posts and the central one, you can fix up other structures needed to form the roof structure. Four smaller

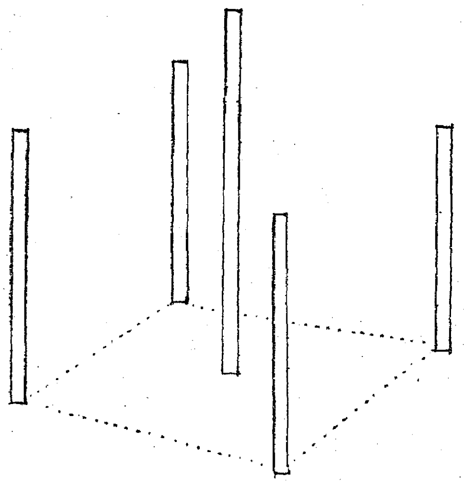


Figure 2

bamboos of 14 feet long each are necessary to form the base of the roof. The four sticks are tied to the tips of the four standing posts so as to project 2 feet on each side. (Thick lines as in figure 3).

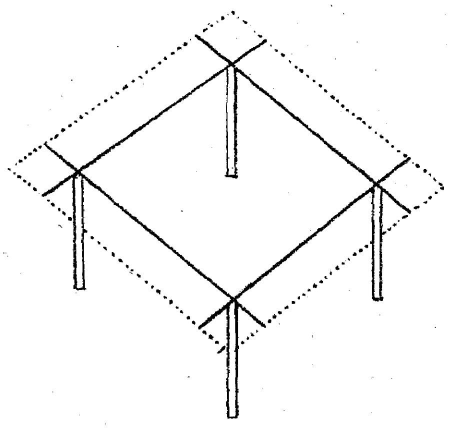


Figure 3

Still smaller bamboos about ¾ inch to 1 inch in diameter are tied to ends of these projecting four corners,

and now you get a square nearly 14 feet each side that will form the base of the roof. (Dotted lines as in figure 3).

From this base still smaller sticks are tied about 9 inches apart and all their other ends are secured to the tip of the central post. Next would come the cross sticks that would complete the roof structure. These cross sticks help to hold coconut leaves that serve as roof, and also give additional strength to the roof frame work (Figure 4).

Now thatching materials may be filled up so as to complete the roofing. The usual thatching materials available in villages can be used, reinforced with paddy

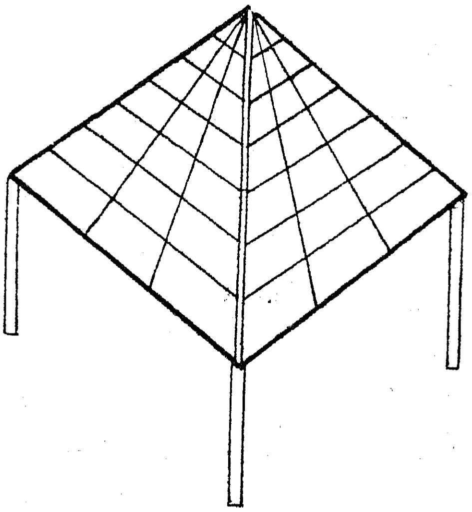


Figure 4

straw or coarse grass and such roofing lasts for a number of years. An half an inch poultry mesh wire netting as a protection against the rats, just below the katcha

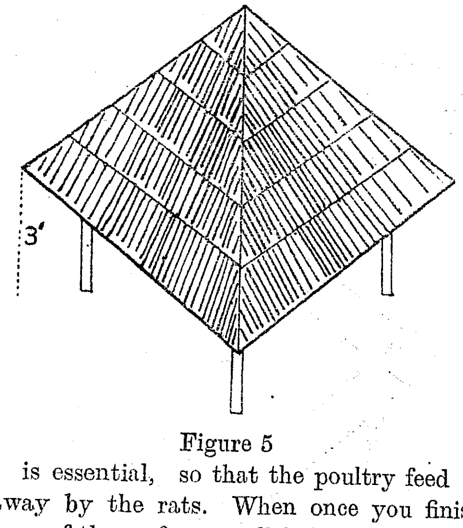


Figure 5

roofing, is essential, so that the poultry feed is not eaten away by the rats. When once you finish the putting up of the roof, you will find that the corners of the roof, are about three feet above the ground. (Figure 5). On no account try to deviate from the measurements given thinking that the same is not as per standard for putting up such a shed. The house under construction is for poultry and not for any other purpose, and hence the stipulations.

Now that the shed is ready you can go to the next stage of constructing side walls. A foundation of one and a half feet depth in brick masonry is essential to prevent the bandicoots from burrowing into the house. Just dig up 18 inches foundation trench all round and in the bottom put in broken glasses, rusty iron pieces, etc., and raise a mud wall with clay and sand. Some lime water added to this mixture will give it a better

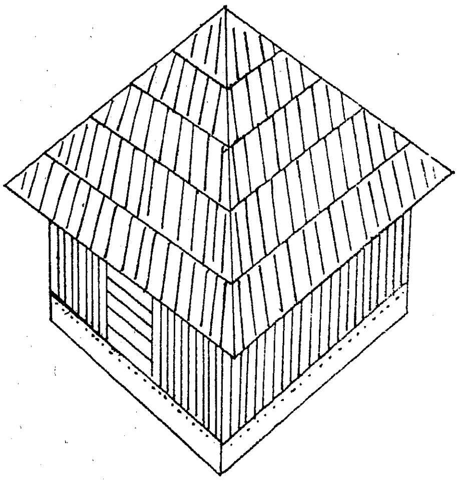


Figure 6

binding. If you can add some cement too, it will be better. The side walls should be 15 inches in height.

White rectangular spaces with dotted lines at the bottom of the figure 6 indicates the side walls. The walls made you can fix up small solid bamboos embedded in the wall itself with an inch space between so as to form the sides. It is necessary that these small upright sticks embedded in the wall, project well up inside the thatched roof, so as to avoid predators getting into the house. (Vertical lines above the foundation in figure 6 are the bamboo sticks.)

The door shall be $3\frac{3}{4}$ feet × 2 feet fixed above the 15 inches wall on the front side. The door can also have the bamboo frames used for the four sides. The roof will be over hanging in front of the door and hence for getting in one should bend well and get in with a little difficulty, and this need not worry you. The lesser you go into the deep litter house, the better for the birds.

Now we come to the most important aspect in the deep litter house and the success or the failure of performance in this house is dependent on this aspect.

If you are not careful about watering arrangement, you stand to loose the entire lot of birds in this deep litter house. If the importance of this arrangement is understood, and taken care of there will be no difficulty at all. In the right hand corner of the deep litter house set apart an area $1\frac{3}{4}$ feet by $1\frac{3}{4}$ feet for this watering arrangement. You have the fifteen inches walls in the corners of the house and now make a tub like arrangement by constructing fifteen inches walls inside the house so as to make the tub $1\frac{3}{4}$ feet square. (Figure 7.) At the bottom of this

tub-like construction put a basket full of sand, and keep three or four new bricks so that the water spilling may be absorbed by them mid way in the tub-like construction , arrange a small bamboo platform that will hold an open pot of water and the birds will drink the water by jumping up on the small parapet wall constructed. While they stand and drink it is likely some water

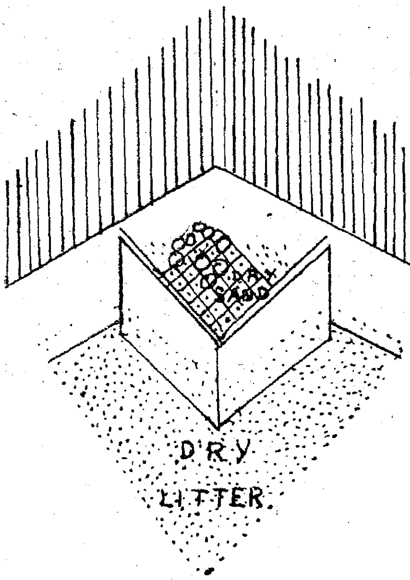


Figure 7

may spill, and this spillage, should fall inside the pit itself and not outside, where there is the deep litter. If the deep litter gets wet with drinking water it will be damaging the spot where bacteria multiply because of the availability of heat and moisture. So it should be your duty to see that the litter is not made wet. While placing the shallow water pot on the bamboo, flooring midway in the tub, see that the birds do not topple the pot. Try to prevent birds from getting into the pot also, by arranging few sticks.

Now that the watering arrangement is over, you can turn to the left side corner to make the egg laying box. Deal wood planks can be used for this purpose. Birds require privacy while laying eggs. The actual laying box should be a bit dark, with the box itself situated a little below the litter level. It is not necessary for you to build individual nest boxes and one colony nest would do for the birds. The nest itself can be about four feet long, and 12 inches broad. The rear height would be 18 inches. Two round holes of 10 inches diameter each on the front side would serve the purpose. The wall of the house itself will form the back side of the box. As suggested already, the floor of the nest box can be four inches below the level of the litter and this would give privacy for birds. The area between the two round holes made, would be a bettter hiding place for hens more shy than the other. If you can think of providing a door so as to collect the eggs from outside and not going inside the house, you would be going a step further from the ordinary breeder. You can think about this leisurely and try to do the same in the way you like (Figure 8).

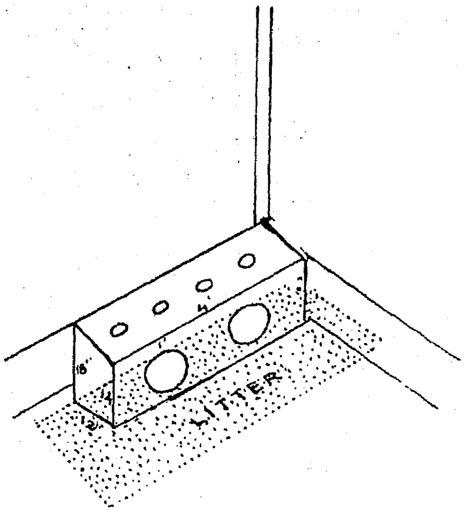


Figure 8

Next in importance are the feed boxes. You can make one yourself with old deal wood boxes. We do not think a carpenter is necessary, if only you have a hand saw and some nails. The feed box must be about 5 to 6 feet long. If you think it convenient you can have two each of three feet long. First make a tub thre feet long and 5 inches broad and 6 inches deep thus.

To both the ends attach a stand like the one shown in the sketch here. This would place the feed through 5 inches above the litter level. Two or three inches may get burried in the deep litter also, and you need not much worry about this. One inch central

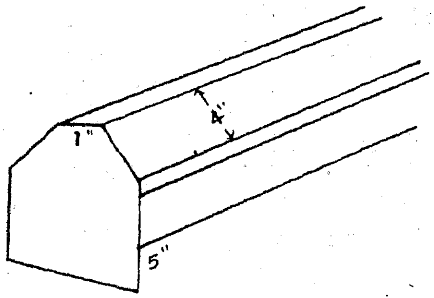


Figure 9

space is for the central plank that will be fixed for the entire 3 feet length. This central plank situated 4 inches above the feed box would prevent birds getting into the box.

It is very important to note that the feed boxes should always be full, two-thirds level only so as to prevent spilling.

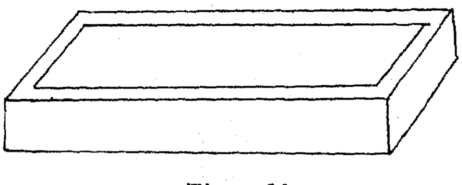


Figure 10

One other item requires to be attended now so as to complete the equipments needed. This item is the perch. The perch shall always be two inches broad with the edges rounded off. Bamboo is being used as perch, but there is a school of thought that the birds require flat two-inch space for resting and sleeping and not the rounded bamboo. Hence you can select any jungle wood that would give you just 2 inches flat sitting space for birds. See that the sticks you select

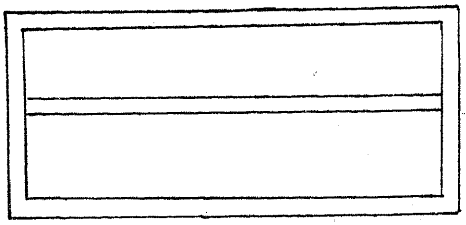
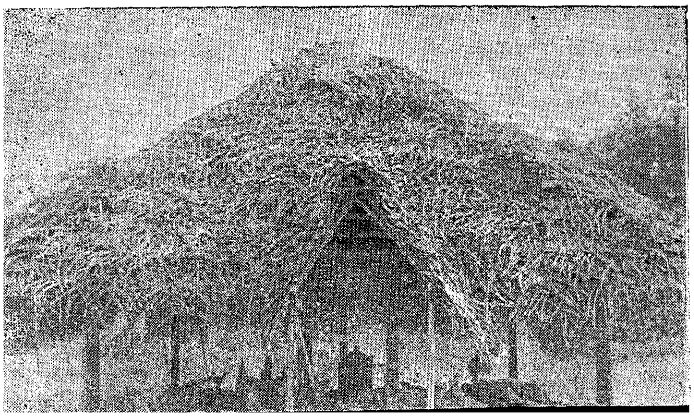


Figure 11

are as straight as possible. This house you have built now requires about 24 feet long perch. As you cannot put the same in one length you will have to arrange them in three rows and about 2 to 3 feet above the litter level. If you provide 3 rows of 8 feet long each, you would be giving the required length for the birds. The perch will be hanging tied by ropes to the corners.

The last item to be attended to now is the flooring and providing the litter. To about 4 to 6 inches, the floor should be raised inside the house so as to avoid seepage of water during rains. You can collect broken bricks and tiles, and granite stones from the road side and throw them all inside the house to make up the level. When once you have done it, give the same a good beating so as to make them crumble and get tight over the floor space. Now add the litter material to the floor to a height of about 6 inches. Litter material can be saw dust wood shaving paddy husk, groundnut cake husk, sugarcane stems well dried and powdered

An ideal Deep Litter Poultry House



very small bits of paddy straw or even dry leaves powdered. One coffee planter has used coffee seed husks also. Whatever you may use, must be in very small bits so as to prevent them from caking. The litter must alsways be dry, without cakes and in powder form.

Now that things are complete, you can let in birds. It is necessary to plan the fixation of out fits into the house so as to give the birds maximum comfort. A plan is given here regarding arranging things inside the house. This arrangement would leave maximum comfort for birds.

You need not be very anxious to let in cocks if you are interested in getting eggs for table purposes only. I am sure you know hens will give eggs without cocks, and these eggs better for longer time for they are infertile. You have another gain also. You save the feed used up by cocks.

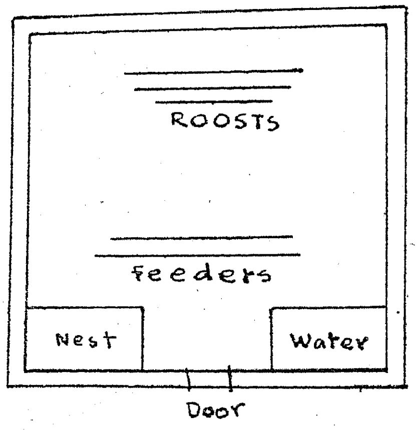


Figure 12

This deep litter house you have constructed now not only gives you eggs day after day, but has a surprise packet of presents for you at the end of the year. The litter after one year when removed and used as manure would give you an extra Rs. 20 per bird if used on sugar cane fields or an extra Rs. 7 to 10 per bird if used in paddy fields.

If you have time, please walk into Poultry Research Station, Nandanam, Madras-35, and we will be able to show you such poultry houses and bigger ones also.

Our thanks are due to Dr. F. V. Babu, Grain Purchasing Officer, Poultry Research Station, Madras, for his good suggestions in getting up this paper and Mr. Allan A. McArdle, F. A. O., Poultry Production Adviser to the Government of India, for every small detail given by him in person.

251

Thengumarahada Co-operative Society

The Thengumarahada and Hallimoyar villages are situated in the Kil-Kotagiri firka of the Coonoor taluk on the Eastern slopes of the Nilgiris at an elevation of 1,300 feet. The average rainfall in the area is 39 inches. The Irulas and the Badagas are the two hill tribes living in this area. The Irulas are small in stature and black in complexion. They practice agriculture. The Badagas too are good agriculturists. They grow potatoes and English vegetables. Their womenfolk are more hard working than their menfolk. The Badagas form a progressive community in the district.

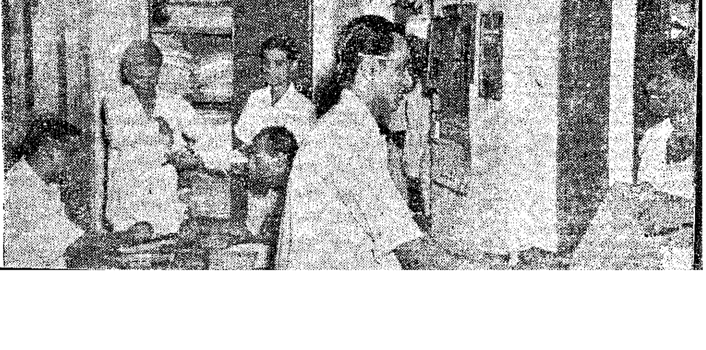
At this place around the above villages there were about 500 acres of land fit for cultivation with Moyar river as the northern and western boundary. The initiative to bring this land under collective farming came from some of the leading ryots of the Kil-Kotagiri firka as early as 1947. The Irrigation Conference held in the same year considered the proposal. The area was then inspected by the Executive Engineer (Colonisation Division), Sub-divisional Officer, Deputy Director of Agriculture, District Forest Officer and the Sub-Collector, Coonoor. All of them favoured the schme.

The Board of Revenue and the Chief Conservator of Forests have submitted a proposal to the Government that to begin with an extent of 100 acres of the area in question may be leased to an organisation proposed to be formed as "Thengumarahada Vyavasaya Corporation" and if the working of the scheme is successful a further area of 100 acres may be granted each year in the next four years on the following conditions: The lease should be granted to the Corporation for five years; provisions should be made for the extension of the lease for atleast another five years with each individual members of the Corporation being given a separate share of land, the question of permanent assignment being considered later; during the first five years only foodcrops should be grown in the land; the 100 acres of additional new land, if granted every year, should be cultivated every year; the lease is liable for cancellation in case the whole extent of the land leased out is not brought under cultivation within one year from the date of the lease, and since it is a highly malarial tract the Corporation should undertake at its own cost anti-malarial and other preparatory measures.

The Government have accepted the proposal. The Thengumarahada Vyavasaya Corporation came into existence in 1948 and started functioning in the same year with 123 individual ryots as its members with a paid-up share capital of Rs. 74,018. The Corporation took-up the cultivation of 100 acres in the first year and subsequently 100 acres of additional land every year in the next two years thus bringing the total land cultivated by the Corporation to 300 acres in three years. The land was not subdivided and distributed among the members. The Corporation itself cultivated the entire area and the profit earned was divided among the members equally.

In 1951 the Government have passed orders for registering the Thengumarahada Vyavasaya Corporation as a co-operative society under the Madras Co-operative Societies Act VI of 1932. The 500 acres of land was leased to the society for a period of five yars. Thus the present Thengumarahada Co-operative Farming Society came into existence. Paddy, Cholam, Ragi, are the main crops of cultivation.

The Thengumarahada Co-operative Society runs a consumers' store for the benefit of its members



A member of the Thengumarahada Co-operative Farming Society with his family

The society was registered on the 30th April 1952 and started functioning from 29th August 1952. The area of operation of the society is confined the villages of Kil-Kotagiri firka. It is now working with a membership of 141 ryots and a paid-up share capital of Rs. 92,590. An extent of 500 acres of forest land has also been allotted to the society for cultivation by the members of the society. This has been distributed equally among the members of the society for a fair rent. The income accruing by way of this rent is being utilised for the common benefit of all the members. During the year 1964–65 a sum of Rs. 53,442·68 has been collected towards land rent from the members. A sum of Rs. 6,568 has been spent during the same period towards the members common benefit.

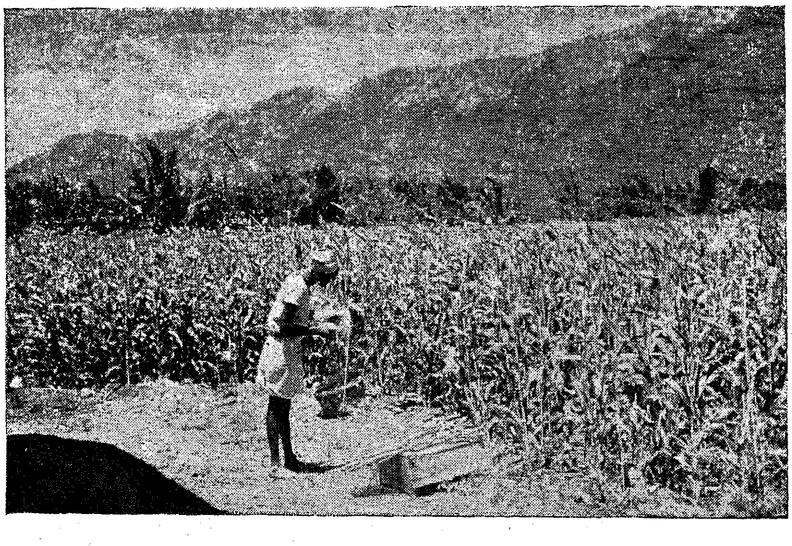
An important feature of the society is that no Government loan has been issued to it. The society advances loans to its members for cultivation purposes from its own funds. During 1964–65 a sum of Rs. 46,500 has been advanced by it to its members as loan and Rs. 27,155·59 has been collected against the loan advanced.

The society has as on 30th June 1965 Rs. 58,241·81 in various investments and Rs. 86,376·58 as reserve funds.

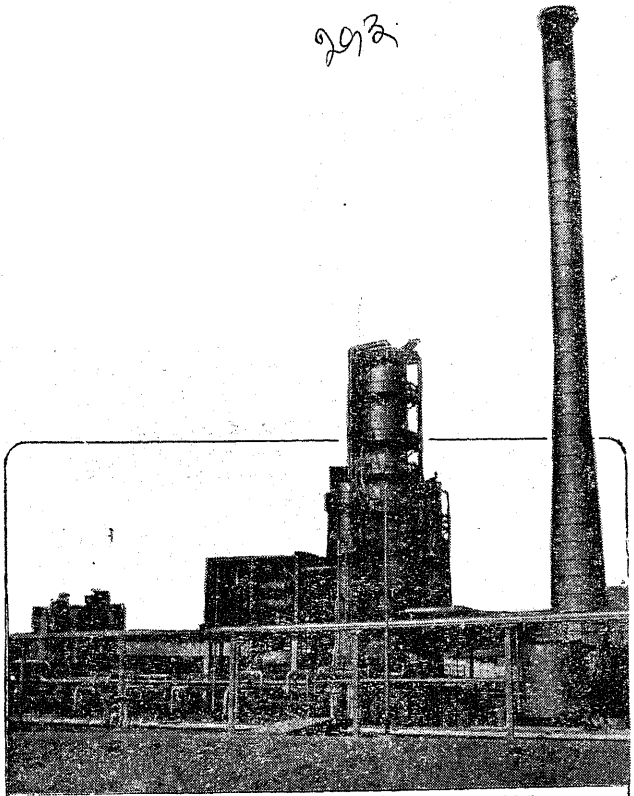
The Society runs a poultry farm, a dispensary, a public radio set, a middle school with classes up to 6th standard and a children's park. It is maintaining a Kangayam stud bull and Murrah buffalo for upgrading the cattle stock of its members. A post office is also functioning at the Thengumarahada colony from 1958. It runs a van daily between the colony and Bhavanisagar.

Since 1965 the 500 acres of land used by the society has been permanently assigned to the society on condition that the lands should not be leased to tenants but shoud be cultivated by the members themselves.

Eversince its inception the Thengumarahada Co-operative Farming Society is running very profitably and its working is worth-watching by other societies of the same nature.



A view of the Thengumarahada Co-operative Farming Society's lands ready for harvest



THE PETROLEUM INDUSTRY

SRI B. SHIVARAMAN,
Chief Production Engineer, IOC., Gauhati Refinery.

To sustain life in any form on earth energy is essential. Energy is one vital force that has shaped human civilization and that will continue to contribute for the progress of tomorrow. And energy is crude oil or petroleum. The existence of oil has been known for at least 7,000 years. Throughout the period oil has been put to use in some form or other. The growth in the use of oil, one of the world's most versatile minerals, has been spectacular since its first commercial production in the United States of America in 1855.

Today petroleum because of its abundance, chemically versatile nature and easy transportability supplies not only energy, heat, light and electricity, but also provides raw materials for the chemical industry from which many kinds of fibres, fertilizers, synthetic rubber solvents and almost endless variety of plastics are manufactured. Petroleum products as fuel for transport media, have increased man's mobility on land, on sea and in air to an astonishing degree. Investigations are in progress in the laboratories to convert components of oil into edible proteins. If these experiments are turned into commercial reality it would bolster the diet of millions of people all over the world and provide an effective weapon in the war against hunger and malnutrition.

Crude oil in commercial quantities was first discovered in India in 1890 at Digboi where a small refinery was built and commissioned in 1901. Until the country attained political independence in 1947, no large scale or systematic efforts were made to develop this industry.

With the advent of independence the picture changed radically. Because of the vital importance of petroleum industry to national security and to the independent political and economic development of the country, the industrial policy resolution of 1948 and 1956 laid down the main responsibility for the development of oil industry with the State.

The Government also felt that the policy to establish inland refineries would enable the country to choose refinery locations from the point of view of balance in regional development. Between 1954 and 1957 three refineries were set up in the private sector, the Burmah-Shell and ESSO Refineries at Bombay and the Caltex Refinery at Visakhapatnam to process imported crude oil.

Refinaries

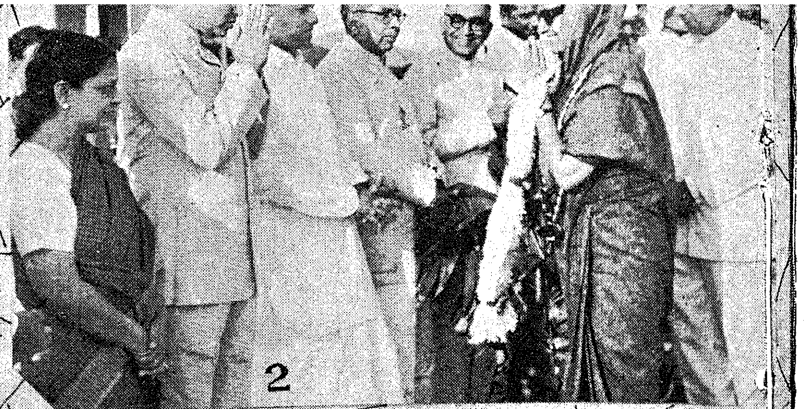
With the discovery of a major oil field in the Naharkatiya and Moran regions of upper Assam the Government of India decided in 1958 to set up two refineries in the public sector to process the indigenous crude oil, one each at Gauhati and Barauni with capacities of 0·75 million tons and 2 million tons, respectively. The technical assistance offered by the Governments of Rumania and the Soviet Union for setting up these refineries was accepted. In the meanwhile a major oil field was also discovered by the Government owned Oil and National Gas Commission in Gujarat and in 1962 the Government signed an agreement with the Soviet Union for a 2 million tons refinery at Koyali. The Gauhati Refinery would be expanded to 1·0 million tons and the Barauni and Koyali Refineries to a 3 million tons each. Besides these public sector refineries, three more refineries are being set up by the Government in collaboration with foreign private oil companies, one each at Cochin, Madras and Haldia.

The Gauhati Refinery went on stream on 1st January 1962, the Barauni Refinery on 14th July 1964 and the one at Koyali on 11th October 1965. These three refineries are processing indigenous crude oil. In view of the increasing demand for kerosene and diesel oils in our country emphasis has been laid to increase the production of these fuels by selecting suitable process units.

With these refineries in full production, we will be producing a large variety of petroleum products ranging from liquified petroleum gas, solvents, motor spirit, aviation turbine fuel, kerosenes, diesel oils, furnace oil, bitumen, various grades of lubricants and petroleum coke.

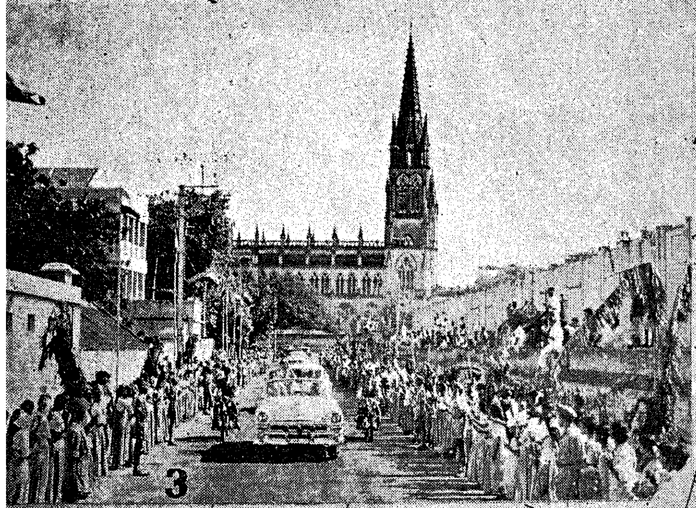
Prime Minister's VISIT TO MADRAS

1

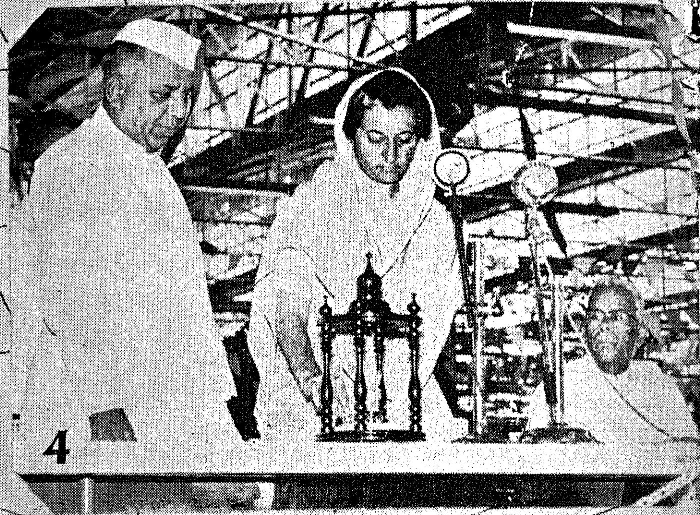


2

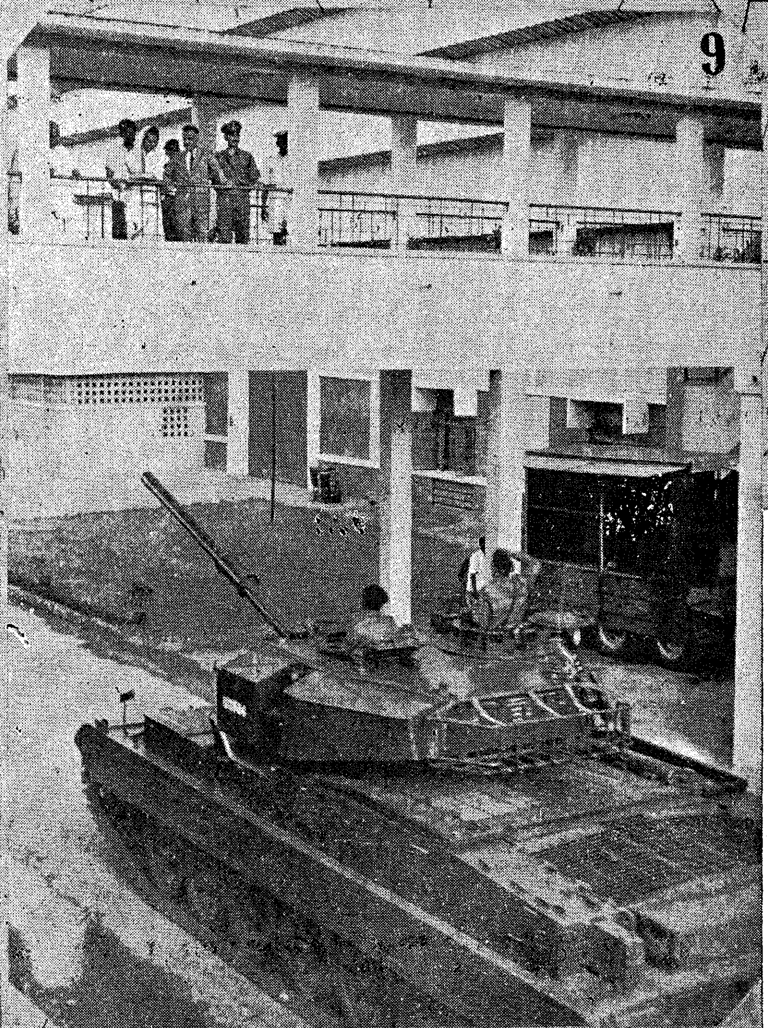
8



3



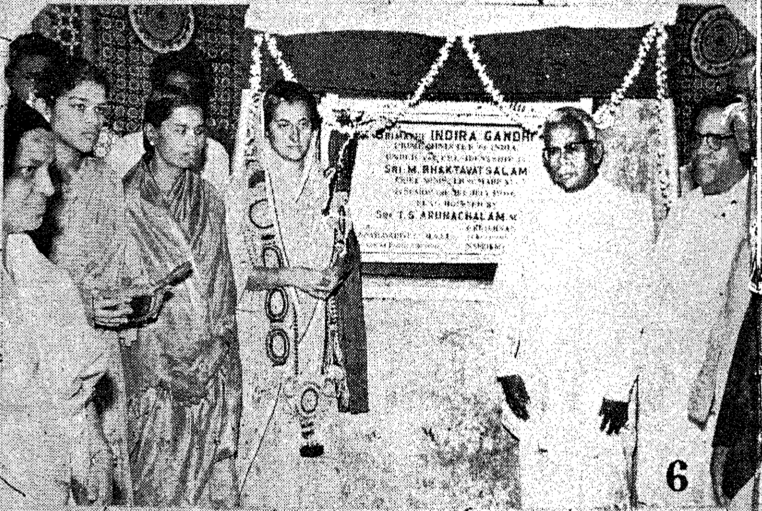
4



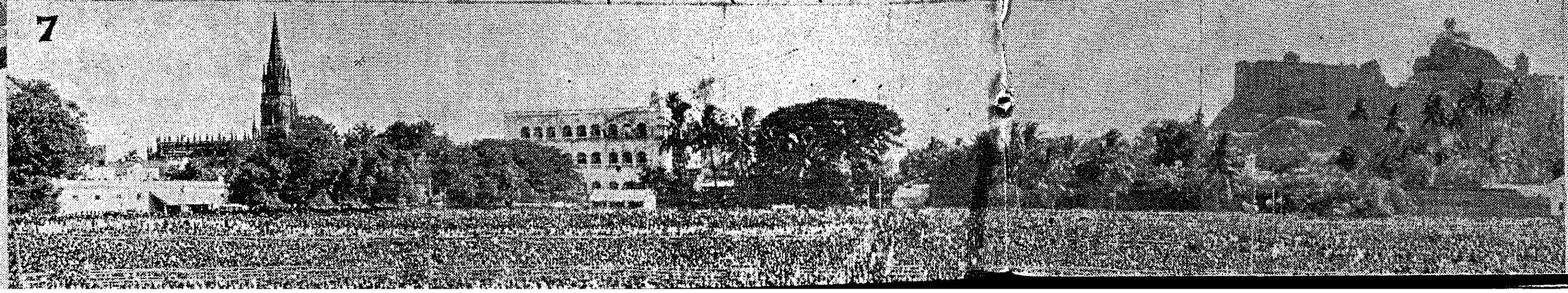
9

10

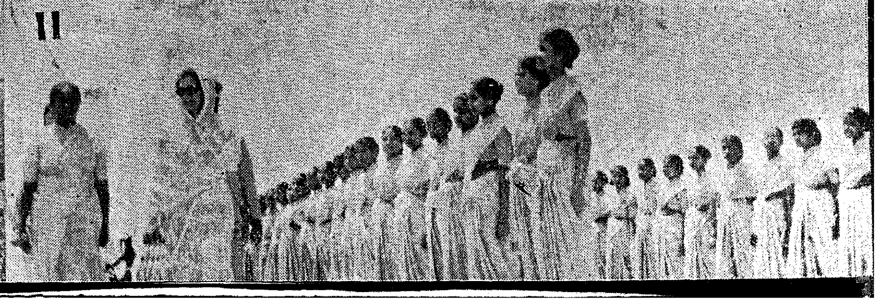
5



6



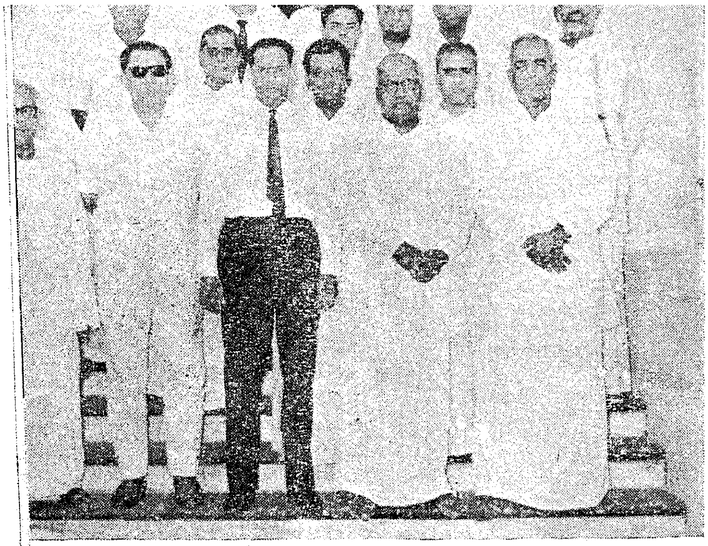
7



11

The Prime Minister Indira Gandhi during her visit to Mad
June inaugurated the Ordnance Factory at Tiruchirappalli an
Heavy Vehicles Factory at Avadi near Madras.

(1) Sri M. Bhaktavatsalam, Chief Minister, received the Minister on her arrival at Tiruchy Air Port. (2) V.I.Ps. are introduced to the Prime Minister on her arrival at Madras Air (3) A view of the procession of the Prime Minister at Ti (4) The Prime Minister inaugurates the Ordnance Factory at Ti (5) Srimathi Indira Gandhi inspects some of the equipments pro at the Ordnance Factory. (6) Prime Minister Indira Gandhi la Foundation Stone for the Women and Children Library at Ti 7) The Prime Minister is addressing a mammoth gathering at a meeting held at Tiruchy. She also addressed a huge public m at Madras. (8) Sri Ujjal Singh, Governor of Madras receive Prime Minister on her arrival at Madras Air Port. (9) Srimathi Gandhi witnessing the demonstrations of the tank " Vijayanta " at the Avadi Tank Factory. (10) The Prime Minister is recei model of the tank " Vijayanta ". (11) The Prime Minister insp the Guard of Honour given by the Women's wing of the City Guards, on her arrival at the Madras Air Port.



Sri V. Ramiah, Food Minister with Sri Manickavasagam, Minister of Malaysia (First row: third from left) who called on him at his residence

When compared with private sector coastal refineries of similar capacity, the public sector inland refineries have involved higher capital investment. It would only be appropriate that the available facilities in these three refineries are utilised fully to achieve a high degree of productivity and operate at capacities much higher than rated. Although this is the endeavour of very manufacturing industry, the scope for this is greater in a processing industry like petroleum refining. In this respect the Gauhati Refinery has already taken the lead. With the skill, initiative and determination of its employees it has been possible to operate this refinery at a higher capacity than rated.

Necessary talents

We have thus the necessary initiation in the petroleum refining industry and have in our country the required talents, skills and technical knowledge for the design construction, operation and maintenance of refineries. It should be our aim now to develop these human talents and skills to a high standard of competence. Afterall the most important capital that any economy —socialistic, capitalistic or totalitarian—possesses is in the skills and talents which the people carry in their heads. As a matter of fact it is this capital of the creative thinking of man that is responsible for the phenomenal growth of this industry during the past few decades.

296

No country, however great and resourceful, can afford to rely for long on imported or borrowed technical knowledge. Especially for a democratic country like ours this dependence not only makes our freedom insecure but impedes economic progress. The discovery and development of unusual human talents is perhaps the most important investment we can make today for raising the creative capital of tomorrow. In this endeavour success depends primarily on the management's ability to recognise the able.

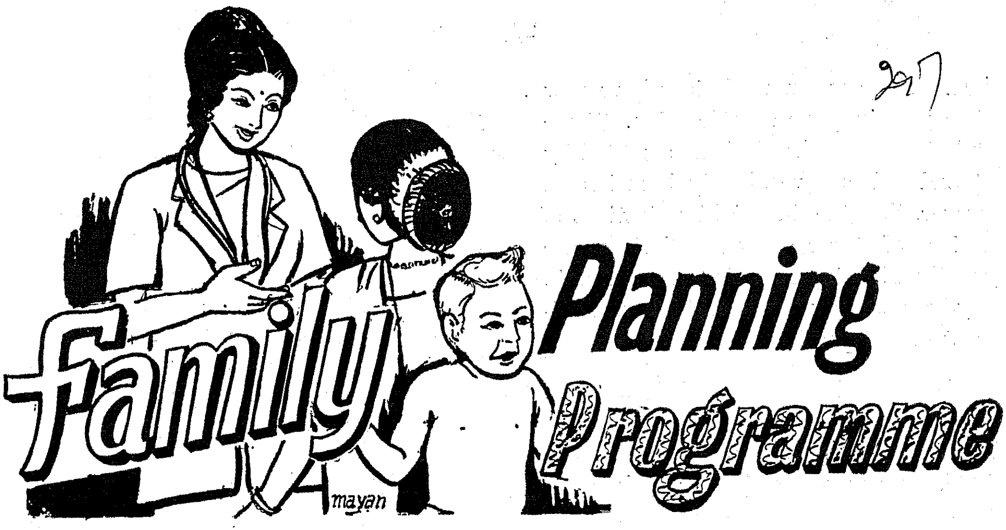
Role of petroleum

Petroleum has a vital role in defence and in food production. Today we find ourselves beset with a host of problems of which the problems of food and a state of tension along our borders are the most serious. The importance of a self-reliant petroleum industry in our country to overcome these difficulties cannot be overemphasised.

Petroleum has brought fabulous wealth to countries where, it is found in abundant quantities. In Canada the discovery of crude oil in commercial quantities and the development of a petroleum industry were landmarks in the speedy economic progress of that nation. There are reasons to believe that there is almost an inexhaustible reservoir of oil hidden underneath the earth and the oceans of the world, of which we in India could expect a big share left for us by nature in our country. The discovery of this hidden treasure by indigenous skill and its effective utilisation through indigenous technology should have the highest priority. A technology of our own, when developed, would not only promote rapid industrialisation of our country, but when exported to earn valuable foreign exchange would also enhance the prestige of the nation.

The future of this industry in our country cannot be judged anymore from the number of technical or financial collaborations signed with foreign companies or Governments to establish new refineries or to expand the existing ones, but can be judged only from the way in which we develop this industry with our own skill and talents. On the success of this venture depends the stability of this biggest democracy and the hopes and aspirations of its teeming millions.

(Courtesy : All India Radio, Gauhati.)



The Second Session of the Central Family Planning Council met at Bangalore on June 27, 1966, under the Presidentship of Dr. Sushila Nayyar, Union Minister for Health and Family Planning. In the course of her address, the Union Minister reviewed the important development that had taken place since its last meeting in Madras in December 1965.

The four-fold programme of Education, Motivation, Services Training, Research and evaluation continues. We have set up separate sections on IUCD on sterilisation, conventional contraceptives, Training, Research and Intelligence Section, Field Operation, Supply and Transport Section and Mass Education. The Secretariat and the Commissioner's office work as one unit and the usual separation between Secretariat and Technical wing is being done away with. Family Planning is essentially a field programme and there are not many problems of day-to-day policy making but what is effective and important is a system of effective administrative procedures and speedy decisions making in order to push the programme forward with all the speed throughout the country.

Central Institute

The Central Family Planning Institute has made considerable progress as an Autonomous Organisation which is functioning as the brain trust so to say to help find solutions for problems experienced in the course of implementation of the programme. The Institute also serves as a technical resources for research, demonstration and developing training curricula.

In the 1st Meeting of the Council, I had emphasised that a stage has been reached when we must have a target for the programme for each State/City/District and Block. These targets have been worked out by experts and we have indicated to the State Governments, the targets to be kept in view and to exceed them if they can. It has been suggested that in respect of IUCD, for the country as a whole, a realistic target would be 20 insertions per thousand of population urban area and 10 per thousand in rural area. Accordingly an overall target of 6 million IUCD insertions has been fixed. In respect of sterilisation operations, the target has been calculated on the basis of 2·5 per thousand of population and has been fixed at 1·23 million. Out of 335 districts in the country, it is estimated that 37 most populous districts account for about one third of the country's population. It is considered desirable and necessary, that intensive effort may be made in such districts for controlling the growth of population in order to provide quick results.

Fall in birth-rate

To start with 30 highly populous districts which come to roughly about 10 per cent of the total number of districts are proposed to be selected for intensive work during 1966-67. Similarly 20 most populous towns have been tentatively suggested for intensive Family Planning work during the year 1966-67. In the areas for intensive work, higher targets of 50 IUCD insertions per thousand of population in urban areas, 20 insertions per thousand of population in rural areas and 3·5 sterilisation operations in urban and 2·5 per thousand of population in rural areas has been suggested. It is felt that with energetic implementation of the programme, it will be possible to register a definite fall in birth-rate within a year or two.

It is obvious that to fufil these targets there should be a fast moving, flexible, administrative and organisation structure and adequate number of trained personnel. The Special Committee that was appointed by this Council at its last meeting has made valuable suggestions

on these problems. These recommendations have now been placed before you for your consideration. Some of the recommendations have already been accepted by the Government and orders have already been issued. I must add, however, that the financial implications of the implementation of these recommendations are causing anxiety to the Planning Commission and certain modifications may become necessary to suit the availability of resources at our disposal.

I feel that one of the most important needs is training. The Central Family Planning Institute had arranged a Workshop and Training Camp at New Delhi from 8th to 12th March 1965. The recommendations made at the Workshop are before the Council. The Government of India has generally accepted the recommendations. I may urge the State Governments to start the required number of training centres expeditiously to meet the requirements of the trained personnel.

Task force

In order to assist the State Governments in partially solving their difficulties in recruiting doctors 200 doctors are being recruited centrally to be placed at the disposal of the State Governments whichever necessary. This 'Task Force' will consist of doctors who will work in rural and urban areas for family welfare planning programme and shall be available for special programme such as camps for IUCD and intensive family planning campaigns wherever they are launched. The task force will consist of the following categories of Officers.—

(1) 200 Medical Officers (General Duty Officer),

(2) 15 Specialists (Gynae), 1 for each State, and

(3) One Consultant in Obstetrics and Gynaecology at the Headquarters.

I am glad to say that IUCD has been welcomed by the people. The number of insertions made up to 31st March 1966 is 804,504. The number of sterilisation up to 31st March 1966 is over 1·5 millions of which 5 lakhs were performed in 1965-66. There is no doubt that IUCD has made great technological break through but to achieve the reduction of birth rate we must vigorously pursue programme not only IUCD but also continue the campaign for use of sterilisation and conventional contraceptives. The conventional methods with their ready and established acceptability will continue to play an important role in any mass programme of family planning particularly for certain groups such as the newly married couples. IUCD should be popularised among those who have one or two children and might want another. Sterilisation should be advised to all who have four or more children. Only an all out effort making full use of all the means available can help in achieving the desired results within the time limit we have set for ourselves.

State Governments have already been informed that contraceptives, etc., will be available with the Medical Stores Depots at Madras, Bombay, Calcutta, Karnal, Gauhati and Hyderabad and State Governments will be able to obtain those supplies from the Depots in their regions without any delay or difficulty. To that end administration of those Depots is being streamlined.

Follow-up action

Steps have already been taken to procure adequate stocks of contraceptives and it should shortly be possible for the Medical Store Depots to meet the demand. A vigorous and sustained follow-up action would be needed to ensure results. A periodical, in monthly review at all levels would help to pin-point the difficulties which may hammer the progress and enable timely remedial action being taken. The Government of India would be glad to render such help as the State Governments may wish to seek to remove any difficulties which may come in the way of acceleration of the programme to achieve the suggested targets.

The Cabinet Committee has decided that contraceptives should be sold at a nominal price and this is to be put into practice at all levels. The seller will keep one-third and we are trying to get the other two-thirds for the welfare of the children of those who practice Family Planning.

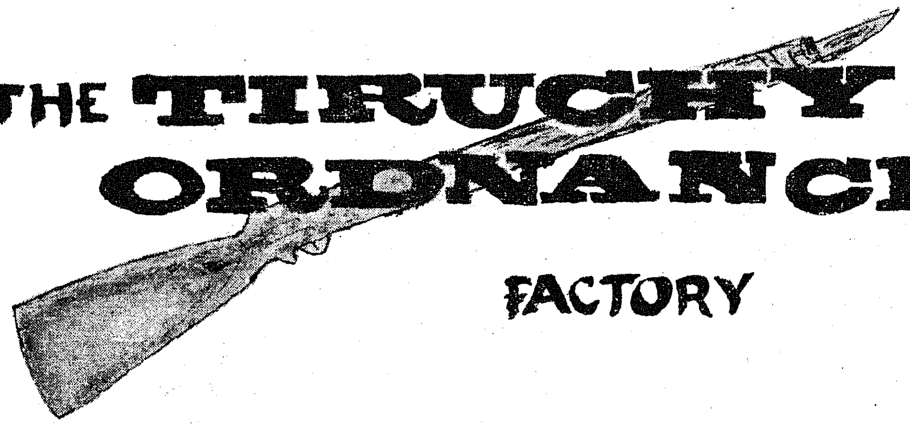
Training facilities

The Central Family Planning Institute, New Delhi, is intended to shoulder the responsibility of conducting courses for trainers of the State Training Centres. The courses for District Family Planning Officers and Staff of Training Institutes are proposed to be conducted by the All-India Institute of Hygiene and Public Health, Calcutta and courses for District Extension Educators are proposed to be conducted by two Central Institutions, viz., Central Health Education Bureau, New Delhi and Family Planning Training and Research Centre, Bombay. The Institute of Rural Health and Family Planning, Gandhigram (Tamilnad) being a Training Centre under the State Government has been given the extra responsibility for conducting training courses for District Extension Educators of the Southern States. The training courses for the workers at the District and Block level will be conducted by the Training Centres of the State.

Keeping in view the necessity of having trained personnel within a short time, the duration of training of different categories of personnel have been reduced to minimum as decided in the Workshop on Training. It is to be seen if this will prove adequate or not.

The Demographic, Bio-medical and Communication Research will continue to make valuable contributions to assist in our programme. I have no doubt, that with crusading spirit, missionary zeal and approach and involvement of people at all levels we shall succeed in our effort in spite of all difficulties.

THE TIRUCHY ORDNANCE FACTORY



R. M. MAZUMDAR,
Director-General, Ordnance Factories.

Planned as a part of our Defence Five-Year Plan Ordnance Factory at Tiruchirappalli is the fourth Ordnance Factory to be commissioned since 1962. Besides conventional infantry rifles, it will produce automatic rifles, carbines and light machine guns. Full production in this Factory, together with the weapons produced by the older factories at Ishapore and Kanpur and small arms from the factories at Kirkee, Khamaria and Varangaon will make the Defence Services self-sufficient in these weapons and their ammunition.

The Ordnance Factory has been set up without any foreign assistance or collaboration. The project is estimated to cost about Rs. 14 crores, including a foreign exchange component of Rs. 3 crores. The main factory building accommodates under one roof the tool room, heat treatment shop, component and maintenance shops. A separate forge shop with a floor area of 2,434 square metres has also been constructed for the forging of various components. This will make the factory self-sufficient. Furthermore, for testing the weapons manufactured in the factory, a proof range equipped with modern facilities including a closed circuit television set has been built.

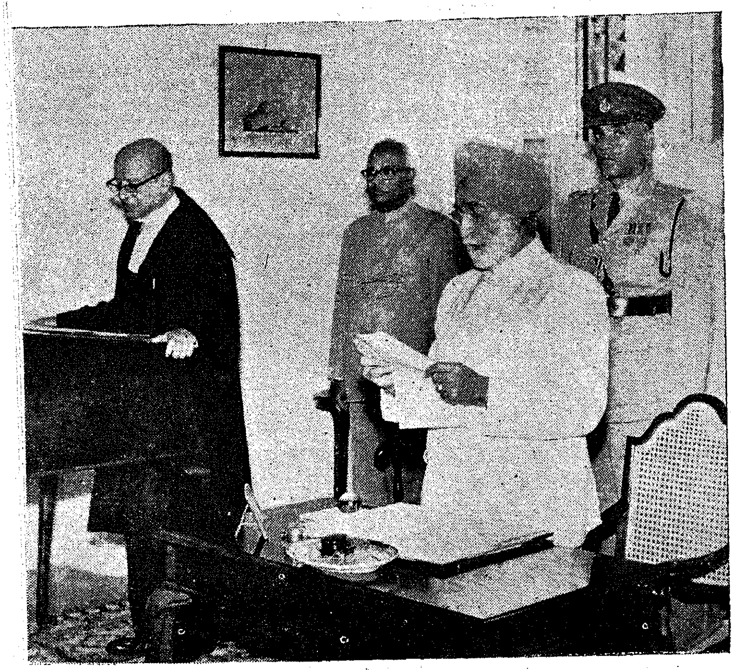
The planning and layout of the factory, including the technical buildings, township, ancillary services and communication system as also the design, selection and procurement of the plant and machinery was all accomplished within the resources of the Directorate General of Ordnance Factories without any assistance from abroad. Well considered and calculated decisions were taken even at the time of the initial planning to utilise the maximum the existing resources in the country. Indigenous resources have been utilised to the utmost for obtaining a large number of machine tools and the development of new types and designs to suit the special requirements of the factory. The machine tool manufacturers in India notably Hindustan Machine Tools Limited, Praga Tools and M/s Excello readily responded to this challenge. In particular, we take pride in having been instrumental in the development and production of electrically operating milling machines by the Hindustan Machine Tools. This alone has resulted in a saving of Rs. 1·45 crores in foreign exchange.

Covering an area of about 1,840 acres, the factory is situated at a distance of 24 k.m. south-east of Tiruchirappalli town. The factory township is located just west of the factory. The township is completely self-contained with its own roads, electricity, water-supply, a 25-bedded modern hospital, a school for 200 children and a Post and Telegraph Office. For the present, about 1,000 residential quarters are being built. Out of these, about 350 have been completed. Even the lowest type of quarters is a self-contained, airy and commodious unit with two living rooms, a separate kitchen, an independent sanitary annexe, a fan, plug point and water tap.

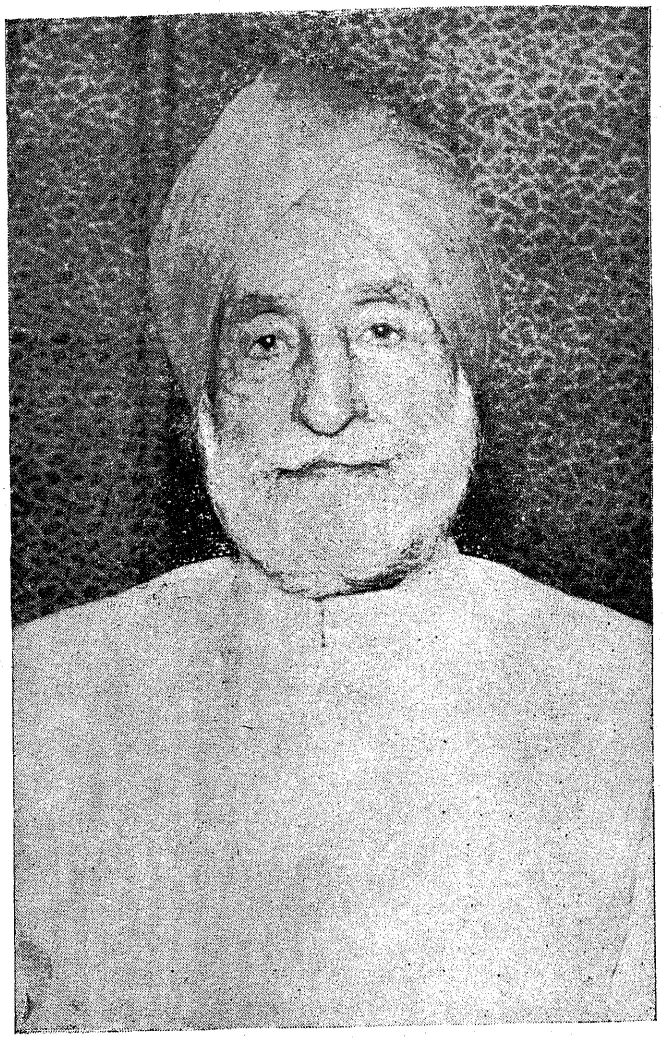
Formal sanction for the establishment of the factory was issued in March 1964. The work on the factory buildings started in Janury 1965 and the construction of the township commenced in July 1965. As soon as the construction of civil works was entrusted to the Government of Madras, they acted with commendable speed and foresight. The target dates set for the completion of civil works have, by and large, been maintained, and the factory has now commenced production of components and the assembly of carbines according to schedule.

The factory owes a great debt to the personal dynamism of its founder-planner, the late Shri S.J. Shahaney, former Director-General of Ordnance Factories. The inauguration of this factory will, therefore, be yet another handsome tribute to his inspiring memory.

Sardar Ujjal Singh was sworn in as the Acting Governor of Madras by the Chief Justice Sri M. Ananthanarayanan on 28th June 1966 morning at Raj Bhavan, Guindy

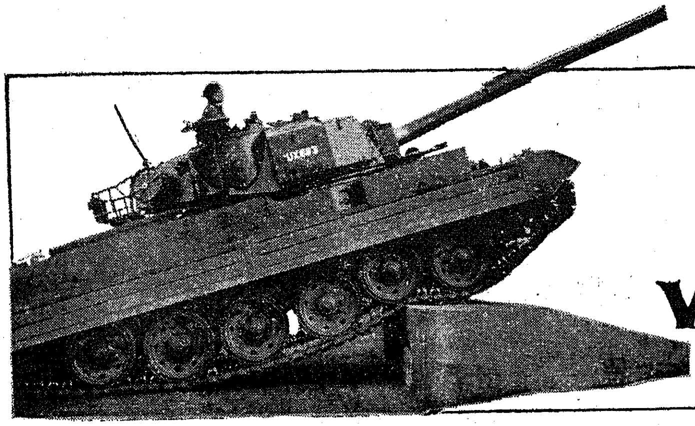


Justice Sri M. Ananthanarayanan, I.C.S., was sworn in as the Chief Justice of Madras by the Governor of Madras on 1st July 1966



Sardar Ujjal Singh, Governor of Madras

Sri. M. Bhaktavatsalam, Chief Minister, distributing Pattas of Land (housing sites) to the poor (Harijans, Jawans and others) at a function held at Tirunelveli on 17th July 1966. Pattas were distributed to 2,184 persons. The distributions of lands varied from 2 to 5 cents



The story of VIJAYANTA

" *Vijayanta* "—ever victories—is the name aptly borne by the India-made medium tanks with 105 mm. guns now rolling out of the Heavy Vehicles Factory, Avadi. These amphibious steel fortresses, with a high degree of manoeuvrability and mobility, proudly symbolise the country's determination to defend itself against any foreign aggression.

The Prime Minister, Srimathi Indira Gandhi, has inaugurated the Heavy Vehicles Factory on 3rd July1961 This marks the fruition of a decision taken in March 1961 to establish the manufacture of armoured-fighting vehicles in the country. The Government of India entered into agreements with various firms in the U.K. and the War Office in the U.K. in August 1961. The foundation stone of the factory was laid on December 29, 1961 and the construction of the factory started in June 1962. The Tool Room of the factory was established in November 1963 and the actual work on the production of tanks commenced in January 1964. The first " Vijayanta " rolled out of the factory on December 29, 1965. Since then some tanks have been delivered to the Army and some more have been completed. They have all been subjected to various rigorous tests and accepted as fit for service.

The Heavy Vehicles Factory is, perhaps, the only tank producing factory in the World where most of the main assemblies—engine, gear box, final drive and allied components—and the assembly of the tank itself is done under one roof.

The notable features of production have been the relatively high percentage of indigenous content in the very first tank (in the next three to four years the indigenous content will rise to 80 per cent or more in each tank) and the saving of a considerable amount of foreign exchange. This has been possible as the factory set up in the very beginning its own Tool Room for the manufacture of various jigs, fixtures, special and standard tools required for production work.

To provide the requiste technical backing a well-organized and technically sound Jig and Tool Design Office was established and to create a fund of technical know-how, the Factory set up its own Artisan Training School in November 1961.

FREE SUPPLY OF BOOKS AND SLATES TO PUPILS

It is proposed to supply text books free to pupils in Standards I to III and slates to poor pupils in Standard I only, in all recognized schools in the State from the School year 1966-67. Poor pupils will be those who are getting the benefit of midday meals. The pupils of Standards I, II and III will be given one copy of the nationalised text book in Tamil. The pupils in Standard III, will, in addition, be given one copy of the text book in Arithmetic. The books and slates will be the property of the pupils.

The books will be supplied free only once a year. Slates will be supplied once in three years only. Further replacements during the same year will be the responsibility of the parents.

The Dharmapuri District Publicity Unit of the Government of Madras was inaugurated by Sri M. Bhaktavatsalam, Chief Minister at Dharmapuri on July 12th 1966. Sri G. Bhuvarahan, Minister for Information and Publicity presided.

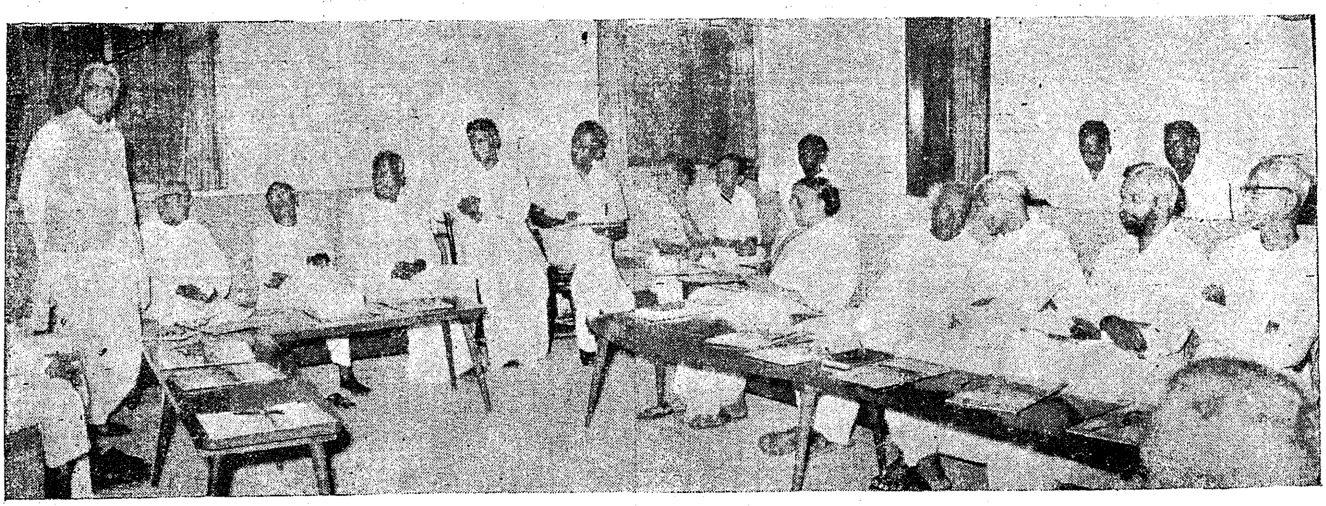
Mahatma Gandhi Centenary in 1969

The Birth Centenary of Mahatma Gandhi, the Father of the Nation falls on the 2nd day of October, 1969. In order to plan the observance of that great event on a nationwide scale, the Government of India have fittingly formed. "The National Committee for the Gandhi Centenary", which consists of eminent leaders from all over India including the President of India, the Prime Minister of India and the Chief Ministers of States.

With a view to assist this National Committee in preparing the Plan for the observance of the Centenary in a beffitting manner, an Executive Committee under the Chairmanship of the Prime Minister of India, has been appointed. At the first meeting of the Executive Committee held on 29th November 1965 it was resolved "that all State Governments be requested to form State Gandhi Centenary Committees to formulate the programmes in the States on the pattern of the Central Committee and implement the same with such additions and/or alterations as State Committees may decide." The executive Committee desires that the Constructive Work Organisations may be given due importance in these Committees and that the State Branches of the Gandhi Smarak Nidhi be closely associated with the work of the respective States.

In the fitness of things, the Government have, in consultation with the Secretary, Tamilnad Gandhi Smarak Nidhi, Madurai decided to constitute a Committee at State Level with a view to co-operate with the National Committee for the observance of the Birth Centenary Celebrations of the Father of the Nation. The Government has, therefore constituted "the State Committee for the Gandhi Centenary Celebrations, 1969" with the following members :—

Sri M. Bhaktavatsalam, Chief Minister—*Chairman*; Sri P. Kakkan, Minister for Home—*Treasurer*; Sri N. Ramakrishna Iyer and Sri K. Arunachalam—*Joint Secretaries*; Prof. T. P. Meenakshisundaram, Vice-Chancellor, Madurai University, Sri N. M. R. Subbaraman, M.P., Sri T. S. Avinashilingam Chettiar, (Director, Sri Ramakrishna Vidyalaya); Srimathi Amirtha Ramasubramanyam; Sri R. Krishnaswamy Naidu, M.L.A.; Sri G. Venkatachalapathy, Madurai; Sri Mohanlal Mehta, M.L.C., Madras; Sri Saw Ganesan, M.L.A., Karaikudi; Srimathi Sarojini Varadappan; Sri B. Parameswaran, M.L.A.; Srimathi L. K. M. Deivanai Muthusamy, Erode; Sri K. Diraviam, Director of Rural Development); Sri V. Padmanabhan (Secretary, State Khadi and Village Industries Board); Sri D. C. Kothari; Sri T. S. Santhanam (T.V.S.); Sri S. R. Subramaniyam; Sri T. S. Narayanaswami, (India Cements); Sri K. S. G. Haja Sheriff, M.L.A., Sri V. R. Nedunchezhiyan, M.L.A.—*Members*; Sri R. Kulandaivelu (Director of Information and Publicity) is the Convenor



The first meeting of the State-level Committee for the observance of the Mahatma Gandhi Centenary in 1969 was held at the Secretariat on 29th June 1966. Sri M. Bhaktavatsalam, Chief Minister, presided, Sri R. R. Divakar, Secretary, Central Committee, is addressing the members on the occasion.

M. I Vol. XXI No. 8 August 1966 302

Progress of Small Industries in Madras State

In the last ten years, small industries have made tremendous progress. They have also made an impact on the Industrial development in this State. This is due to a large number of reasons.

The first reason and probably the most important is the enterprise of the individual industrialist. A large number of businessmen and young engineers have taken up this job as a mission and have concentrated all their efforts and attention in setting up some kind of productive capacity. But for their enterprise and endeavour this development would not have been achieved.

Government's care

The second important reason for this rapid development is the advance that the State has made in technical education. The Government has endeavoured to open up new Engineering Colleges, Polytechnics, and Industrial Training Institutes. With the result, a large number of skilled men in various levels are available for employment in industrial enterprises.

The third important reason for the development is the special care and attention that Government has bestowed on this sector. Government have given various kinds of assistance. They have acquired land. They have provided loans for buildings and machinery. They have provided machinery on hire purchase schemes. They have provided concessions in Government purchases from the small industries sector. They have provided technical assistance through Small Industries Institutes.

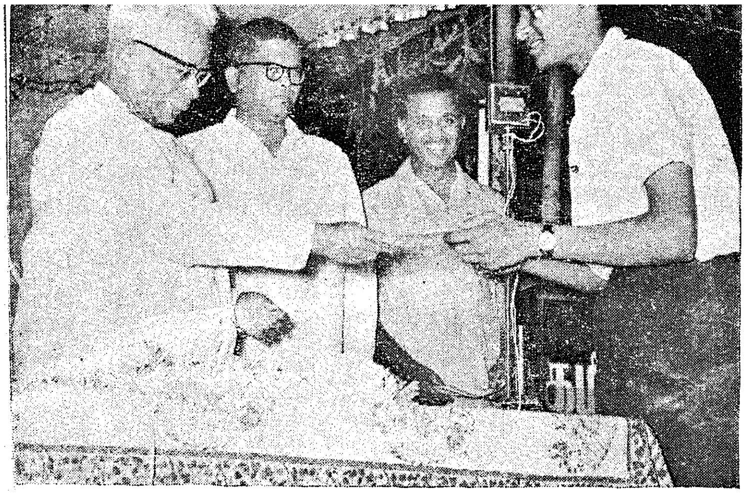
All these have been made use of by the enterprising businessmen.

In small industries there are two broad categories of industries. There is the small unit that concentrates itself on a single item, such as a tooth brush, a card-board carton, a pencil or a time-piece. These are what are called product oriented industries. A number of these items can be made with limited resources and reasonably small capital.

Remarkable progress

However, the bulk of small industries are actually involved in making components for other larger units. Tool Rooms, forge shops and machine shops turn out an innumerably large number of parts and components and

Surdar Ujjal Singh, Governor of Madras recently paid visit to the Guindy Industrial Estate. The Governor is keenly watching one of the Units of the Estate.



Sri M. Bhaktavatsalam, Chief Minister, is giving Rs. 100 to the student Sri K. N. Sekar, who stood First in S.S.L.C. Dharmapuri Government Boys' High School at the Dharmapuri District Publicity Unit inaugural function held in July 1966. The prize was donated by Sri G. Thirumal, I.A.S., Collector, Dharmapuri district.

as the number of larger units increase, this kind of development is likely to progress further. Difficulties in regard to credit financing, space and other problems are forcing larger units to sub-contract many of their components to smaller units. Some years ago, there were not sufficient number of small units to undertake these jobs. Further, small units were not equipped to produce these components with that degree of accuracy and precision that the buyer insisted upon. Today the situation is fast changing and a large number of small units are proud of being able to make these supplies satisfactorily. A real fillip was given to the development of small industries in this State by setting up over 20 Industrial Estates with approximately 400 units. These have proved very useful to the businessman with limited resources. A cluster of such units depends upon each another for production and services. This is also a healthy line of development. Small units have a very bright future. The Defence Ministry in its attempt to locate new sources of supply for weaponry components is trying to interest the small-scale sector in manufacturing Defence supplies. Larger industrial units are trying to offer the manufacture of components to smaller units. Buyers of components and parts are always on the look out for alternative sources ; they do not wish to be held to ransom by single suppliers.

There would be further and more rapid development if we take one important step. This is the provision of credit to small units. As a whole, the owner of the small unit is not able to provide that level of security the Financing Institutions insist upon before they lend moneys. Some relaxation in the margins for lending would assist the small owner to a tremendous degree in enlarging his production and his usefulness to the community at large. In the last four years over 9,000 units have registered themselves as Small units in this State. In the next four years we could reasonably expect double this number. This is a fairly good indication of how rapidly small industries have forged and are forging ahead in this State.

CONSUMER STORES FOR STUDENTS

A scheme to ensure greater involvement of students in the consumer co-operative movement in the country has been drawn up by the Government of India in consultation with the University Grants Commission.

The aim of the scheme is to secure hundred per cent coverage of the student population in Universities and Colleges. Each student is expected to buy at least one share (Worth Rs. 5) of his own co-operative store.

The share money may be included in the admission charges to be paid by students. In case of poor students, this money would be found from either the scholarships or from students' aid funds.

The Department of Co-operation of the Government of India will help the Universities by providing a sum of Rs. 75 lakhs as working capital for the purpose. The stores in the larger Universities would be given Rs. 2 lakhs each, while others would get Rs. 1 lakh. Besides, Government would provide managerial subsidy to the tune of Rs. 25 lakhs to be distributed among the individual Universities and Colleges.

It is hoped that the scheme would cover all Universities and at least half the number of affiliated Colleges within this year.

It may be added that there are 65 Universities and 1,400 Colleges in the country. Together, they purchase Rs. 2 crores worth of books for their libraries annually, besides individual purchases by students. When the scheme for these consumer co-operative stores comes through, the entire book trade is likely to be handled by the co-operatives, besides other commodities of daily use.

Scientific Research in India

Throughout her long history, India has made significant contributions to science—in terms of knowledge of the physical working of the world or in discovering operations that are effective in controlling nature.

The concept of zero and the evolution of the decimal system are among the greatest achievements of the human mind. In chemistry, medicine and astronomy, Indian scientists reached great heights in ancient times. It is possible that Pythagoreans, who were influenced by Indian ideas of transmigration of souls, dietary taboos and number magic were led by Indian conceptions to the geometry which culminated in the Euclidean system of geometrical relationships.

In the fifty years before Independence, we again had many brilliant scientists, who achieved distinction in spite of many fold handicaps. Any country could be proud of names like Ramanujam, Satyan Bose, Birbal Sahni, Meghnad Saha and C. V. Raman, among numerous others, who made significant contributions in many fields.

After Independence

But, despite the fact that intermittently there have appeared such great names in physics and mathematics, medicine and astronomy, chemistry and botany, we have to admit that there was no climate of science in India till recently. By and large, universities, apart from a few industries such as textiles and plantation industries, were the main centres of scientific research. They could not meet all the requirements of growing modern society.

During Second World War and more important, after Independence, however, special organisations and laboratories have been established resulting in a great expansion of facilities and resources. Many more new universities with well-equipped laboratories have been established too; many more students are studying science and the number of research workers has increased substantially.

We have some great names living among us and many young men have shown great promise. The range of scientific investigations in various fields has become so wide that India has become now a staging-post for the world scientists for numerous seminars, conferences and for individual study, particularly in research connected with agriculture, medicine and atomic energy.

Industrial development in India was, until Second World War almost completely dependent on imported technology. Some fundamental investigations were carried out in a few universities and research institutes, but these bore little or no relation to the practical problems of industry.

The outbreak of the War caught the country unprepared. Imports of most industrial materials were cut off while there arose, simultaneously, a greatly enhanced demand for them to meet both military and civilian needs.

To mobilise the country's scientific resources for industrial development with particular reference to production of essential war supplies, the Government of India established a Board of Scientific and Industrial Research in 1940. The need for enlarging the functions of the Board, so that it may serve as a Central Organization for promotion of science and its applications to national development was soon felt and in 1942 the Council of Scientific and Industrial Reserach (CSIR) was established as an autonomous body.

The main functions assigned to the Council were: promotion, guidance and co-ordination of scientific and industrial research in India; establishment and maintenance of laboratories for scientific study of problems affecting particular industries and trades establishment and award of scholarships, fellowships and research grants; utilization of research results towards the development of industries in the country; collection and dissemination of information on research and industrial matters generally and publication of scientific papers and journals.

National Laboratories

The administration of the Council was vested in the governing body of which the Prime Minister is the President and the Minister for Scientific Research and Cultural Affairs, the Vice-President. The governing body is composed of eminent scientists, industrialists and administrators.

To the layman, the Council's name is associated with the network of national laboratories and institutes which symbolize the spectacular expansion of science since Independence. These laboratories and institutes, some of them with attached research stations, are distributed all over the country, from Karaikudi in the south to Jammu in the north, and from Bhavnagar in the west to Jorhat in the east.

The National Chemical Laboratory and the National Physical Laboratory were officially inaugurated in 1950 though they had been functioning for some time before. In the ensuing years, laboratories were set up for research on Food Techonlogy, Fuel, Glass and Ceramics, Metallurgy, Drugs, Roads, Electrochemistry, Leather, Building, Electronics, Salt and Marine Chemicals, Mining, Public Health Engineering, Mechanical Engineering, Petroleum and Aeronautics.

Regional Laboratcries have been established for research on development and utilization of natural resources in particular regions for industrial advancement. The Central Laborataries of the former Hyderabad State were taken over by the CSIR in 1956 and renamed the Regional Research Laboratory, Hyderabad. A Regional Research Laboratory for Jammu and Kashmir States was established in 1957 by taking over the former Drug Research Laboratory at Jammu and a Regional Research Laboratory for Assam and neighbouring areas has been recently set up at Jorhat.

Regional Laboratories

The National Botanic Gardens at Lucknow and the Indian Institute for Bio-chemistry Experimental Medicine at Calcutta are two other institutions taken over by CSIR. The Central Board of Geophysics, Calcutta, was also taken over and renamed the Geophysics Research Board; a National Geophysical Research Institute has recently been established at Hyderabad. A Central Indian Medicinal Plants Organisation and a Central Scientific Instruments Organisation have also been set up.

The Birla Industrial and Technological Museum at Bangalore has been taken over by CSIR from the Visvesvaraya Industrial Museum Society. In all there are at present 28 laboratories and institutes, including the museums, under the Council.

Even the oldest among them has been in existence for just over a decade and some of the later ones, for only a few years; others are still in the formative stage. Even so, they have an impressive record of service and have made notable contributions to the economic development of the country.

Valuable work has been carried out and processess evolved for substituting imported matrials by indigenous and abundantly available once ; and this has not only saved foreign exchange, but what is even more important, it has helped in evolving new patterns of resource utilization.

Agricultural Research

One sector of national economic development in which scientific research has progressed rapidly is agriculture. The Indian Institute of Agricultural Research in New Delhi, together with its ancillary bodies, has travelled a long way since its inception nearly three decades, ago. Now it comprises thirteen Divisions—Agronomy, Agricultural Extension, Agricultural Economics, Agricultural Engineering, Botany, Horticulture, Plant Introduction, Entomology, Mycology and Plant Pathology, Microbiology, Soil Science and Agricultural Chemistry, Agricultural Physics, and the All-India Soil and Land Use Survey. Each division is organised into sections; each dealing with a distinct field of specialization.

Besides its own programmes of research, the Institute undertakes research projects in co-operation with agricultural organizations, institutes and State Departments of Agriculture, as also with foreign agencies like the Rockefeller Foundation, the Indo-US Technical Co-operation Mission, the USAID, the Food and Agricultural Organization of the United Nations and Ford Foundation.

Wheat breeding

Successful wheat breeding work carried out at the institute is a most notable achievement.

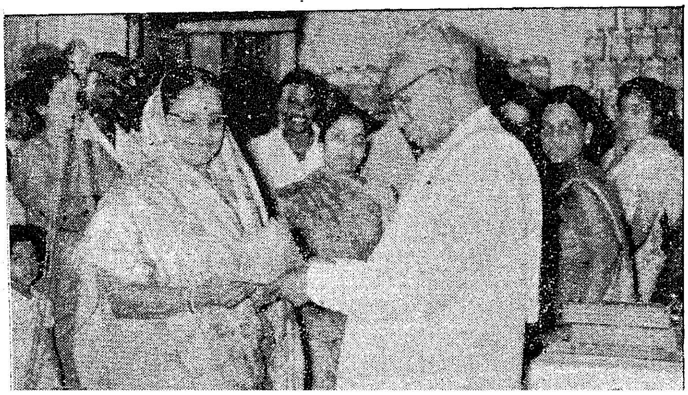
The first improved wheat variety Pusa 4, now N.P. 4 was produced in the first decade of the century. It is one of the most successful wheat varieties developed in India and is now cultivated far and wide, not only at home but also in foreign countries like Australia and Rhodesia.

Following in quick succession came the development of still better varieties N.P. 52, N.P. 80-5, N.P. 165, yielding increased yields and desirable grain type.

And then came another very successful series, designated N.P. 700, with considerable tolerance to rusts and high resistance to loose smut—fungal diseases

Women Consumer Movement in Madras City was inaugurated by Sri M. Bhaktavatsalam, Chief Minister on 15th July 1966 at Royapuram, Madras.

Picture shows.—The Chief Minister is receiving a sample bag containing rice from the President of the Women Consumer Co-operative Stores which was declared open by him. Smt. Jothi Venkatachellum, Minister for Public Health presided over the function and Sri V. Ramiah, Minister for Food participated



which annually take a heavy tol of the country's wheat crop. These have proved widely adaptable and now cover several thousand acres all over India.

More varieties followed—N.P. 800, possessing considerable rust-resistance an immunity to loose smut. In recent years, the Institute has launched an intensive programme of research on the development of short and non-lodging wheat varieties, so that the yield of the crop can be considerably enhanced.

Research in rice production has progressed equally well. At present there are 82 research stations in the country directing their efforts towards the evolution of high-yielding, fertilizer-responsive and disease-resistant strains suitable for different regions and diverse conditions.

As a result of continuous and sustained research work, as many as 445 superior strains, giving on an average 10 to 20 per cent better yield than the cultivators' varieties, have been evolved in different rice-growing States, and the results of breeding for high yield have been spectacular. For instance, Co-25, because of its high response to fertilizer application and resistance to blast disease, has yielded over 8,000 lb. of grain per acre in crop competitions of farmers' holdings. New and better strains are being developed in several other cereals, vegetables and fruits.

Atomic Energy Research

Another field in which India has progressed rapidly since Independence is the newest field of human scientific endeavour, namely the development of atomic energy. Indeed, while the country is economically still a developing nation, in the field of atomic energy she is already bracketed with the half-a-dozen most advanced countries in the world.

The scientists of the Defence Research and Development Organization have done commendable work in building up the defence of the country and have shown great capacity to bring about interdisciplinary collaboration.

In the field of conventional weapons, a semi-automatic rifle known as the Ishapore Rifle, and a special mountain gun have been successfully developed and are being manufactured in the country. Among other weapons developed are a lighter and easier to handle self loading pistol, a powerfull anti-tank grenade, a new type of anti-tank gun and a device for clearing minefields in the forward areas. Practically all types of ammunition, at one time imported, have been developed and are now being manufactured in the country.

In the field of electronics, a manpack light-weight wireless set for use between ground troops and supporting aircraft and a very high frequency trans-receiver are among many times specially designed to meet the requirements of the Army. Considerable progress had been made in designing of sophisticated equipment such as the Radar for specific purposes like early warning, mortar location and fire control.

The ultimate aim of defence science is to devise ways and means through the medium of science and technology for helping the soldier in his task of defending our frontiers, and of enabling him to do this in a most effective manner.

Limitation of Resources

Though much progress has been achieved, India does not yet occupy in the world of science the position to which her traditions, her numbers and the intellectual quality of her people entitle her. There are several handicaps yet to be overcome.

The limitation of resources is a hard fact everywhere and even more so in India.

A need is being felt for some central agency to advise the State on allocation of functions, programmes and funds among different autonomous bodies engaged in scientific research. Such an advisory body would broadly review the programmes and consider the claims of different authorities and then make recommendations for the allocation of resources among them. In addition, it could advise the Government in the relative priorities in research and where best it could be carried. It could also ensure that there is no undue duplication of laboratories or programmes nor undue encroachment by one authority on the functions or province of another.

Another aspect receiving active consideration from the Government as well as some scientific institutions in the country is of competent leadership, team spirit and the problem of attracting all available outstanding talent to scientific research and providing adequate incentives. Scientists Pool and improved service conditions are steps already taken in this direction. Then there is the task of bringing science to the layman—of popularising science. It is essential to build up a line of communication between the various disciplines of science and between scientists and non-scientists. Here again, some steps have already been taken. The setting up of a Scientific Documentation Centre and starting of popular scientific journals are two such.

36

Service Prospects Of Rural Development Staff

According to a Note placed before the Madras Legislature in March 1966, " the most enduring achievement of the Community Development Organisation is, that it has brought the Government and the people together in a co-ordinated endeavour for integrated development of the rural areas, and evoked and enlisted energies of the people that had not been hitherto fully tapped." This silent but solid achievement was the result of the active co-operation extended by the rural public and the effective role played by the officials, as agencies of the Government, entrusted with this national endeavour. However, the need for integrating and regularising the services of Rural Development staff, who were drawn from different departments, with varied back-ground, has been felt for a long time, and there has been a rational re-organisation in this direction during recent years.

The Directorate of Rural Development was set up in September 1965, bringing together various offices of Rural Development Department functioning in different places of Madras City into a closely-knit organisation and is now located in one building at Fort St. George. This Directorate is now functioning as a Head of Department, in all matters connected with Panchayat Administration and Rural Development.

Sri V. Ramiah, Minister for Food, is lighting a "Kuthu Vilakku" to mark the opening of the new building for the Elementary School at Venkatadri Agaram Village, South Arcot district, on 23rd June 1966

The Panchayat Development Subordinate Service has been set up and the Service Rules were issued especially for the three-tiers establishment providing the field staff, within the developmental frame work, assured prospects. The lower two-tiers of the Panchayat Development Subordinate Service, are the Panchayat Development Unit and the Madras Grama Sevaks Service and these two categories constitute district units of Developmental Service. The third one, namely, the integrated category of Block Development Officers and Divisional Panchayat Officers would be a State-wide category.

A systematic approach has been initiated to go into the service conditions of staff and Seniority Lists were prepared, regarding the following categories and communicated to all the members concerned :—

(1) Block Development Officers and Divisional Panchayat Officers.
(2) Additional Panchayat Officers.
(3) Extension Officers (Industries).
(4) Extension Officers (Panchayats).
(5) Extension Officers (Education).

Suitable steps were taken for providing opportunities for appeals, with reference to any omissions, modifications, etc., in the lists referred to above. Most of the lists are being finalised.

Seniority lists of Grama Sevaks have been drawn up by the Collectors concerned and approved by the Director of Rural Development. The Collectors have been requested to communicate the seniority lists to the Grama Sevaks concerned and obtain their acknowledgment and to rectify the defects, if any.

Further, there are a large number of Grama Sevaks (Grade I) appointed under Emergency provisions and continuing in service from the year 1960 onwards. Cases of all such Grama Sevaks working in Madurai, Chingleput, Kanyakumari and North Arcot Districts have been examined by this Directorate and proposals were sent to the Government to regularise their services, with effect from the date of their first appointment. Cases of those Grama Sevaks, in other districts, are under examination at this Directorate. Cases of Grama Sevaks (Grade I), promoted up to 1959, have been considered for better prospects and almost all of them have been promoted as Extension Officers (Panchayats) or Extension Officers (Education).

MORE SCIENTIFIC KNOWLEDGE FOR FARMERS

More spot recordings under the various programmes addressed to rural listeners should be broadcast, had been recommended by the members of the Rural Advisory Committee which met at Tiruchirappalli on June 26, 1966.

The members appreciated the endeavour of the station to popularise the latest paddy variety ADT 27 and suggested more interviews with agriculturists and progressive farmers for this purpose. These interviews were very useful inasmuch as they promoted a free exchange of views and ideas between the successful farmers and listeners. The Committee felt that more districts should be covered under rural programmes like "Gramam Povome", "Namadu Sevai", which highlight the overall development in block areas and the activities of the Village Volunteer Force, Village Co-operatives and Vignan Mandirs.

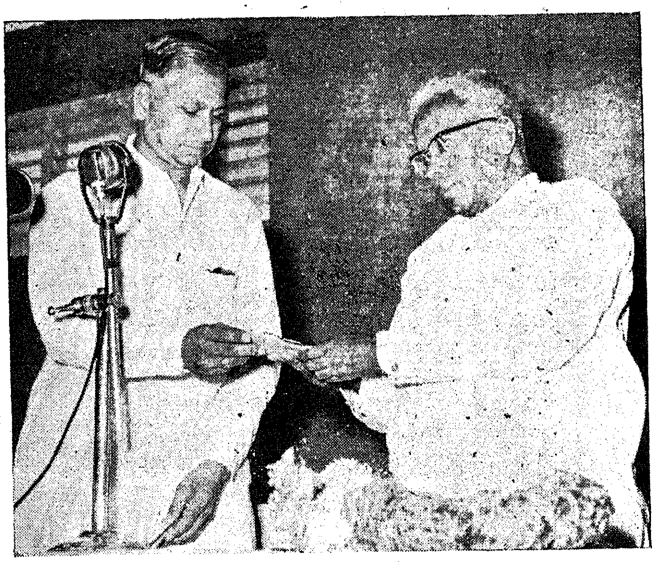
The Station Director, Sri M. S. Gopal, who presided stated that the Agricultural Cell which had been newly started at the station with effect from June 7, 1966, was planning a large number of programmes for agriculturists with a view to increasing production by imparting day, to-day information, instructions, etc., to the agriculturists. Improved practices in agriculture will be explained to farmers in order to enable them to take to modern methods. It was disclosed that a vigorous drive in this direction was proposed to be undertaken by broadcasting practical hints on agriculture which in the long run would help to produce more.

There are 91 Extension Officers (Education) who were recruited from the category of teachers of Panchayat Union Schools. They were working on temporary basis from the year 1962 onwards. Orders were issued, regularising the services of all of them. The services of temporary Extension Officers (Education), recruited from other categories, up to 1965, have also been regularised. 162 Senior Extension Officers (Education) have been confirmed in the 162 permanent posts. Proposals have been sent to the Government for permanent retention of all the 374 posts.

All the 374 posts of Extension Officers (Panchayats) have been made permanent. 213 Extension Officers (Panchayats) have so far been confirmed, in these posts and the orders for the remaining vacancies, will be issued shortly.

Apart from these steps, this Directorate has also taken initiative to afford new opportunities to Panchayat Union staff who had hitherto no openings and avenues of promotion. The concurrence of the Madras Public Service Commission has been specially obtained, for a proposal to fill up vacancies on the Government side, from among the Clerks and Head Clerks, borne on the Panchayat Union Service and for this purpose, a written examination on Panchayat Act and District Office Manual was held at all the district headquarters. The successful candidates will be selected by a Screening Committee. About two thousand persons have written the special examination, conducted in April 1966.

It may, therefore, be stated that the integration and regularisation of various categories of staff in Rural Development Department is progressing in an orderly manner, with assured prospects.



Maharaja Ranjit Singh Memorial Stamp was released by Sri M. Bhaktavatsalam, Chief Minister on 28th June 1966 at Madras

Picture shows Sri S. R. Bhashyam, Postmaster-General handing over the stamp to the Chief Minister on the occasion

Diets around the WORLD

SHANTI SUDARSANAM
Project Nutrition Officer, Directorate of Rural Development, Madras

Idli and Drumstick Sambar for Breakfast.

Rice, Radish Sambar, Greens, Butter-milk and Tomato Pachadi for Lunch.

(Groundnut as a Snack.)

Chappati and Potato Kootu for Night Dinner.

What an attractive menu. It is balanced menu too, for a family in a 'low-income group' in India. That is what the Indian group demonstrated to an International group of 'Nutrition workers' a few months ago.

A menu such as the one illustrated should surely dispel the wrong notion among many people, that balanced diet is an expensive diet—a diet that only the rich can afford and not those in the 'low-income' brackets. It may be admitted here that the very poor will find it difficult to meet the daily nutrition requirement without some help. A close analysis of the menu will however reveal that to have a balanced diet, what is required is some basic knowledge of nutrition and daily planning, so that the right type and the quantity of the cereals, pulses, vegetables and fruit, are combined into palatable dishes, for each meal. There are many common, and yet cheap and nutritively rich food-stuffs available which we are not willing to use, because of perjudice or a false sense of status, or due to ignorance of their nutritive value in foods. Balanced diet, anyway, dose not call for any drastic change in the food habits. In fact as Dr. C. Gopalan, the Director of the Nutrition Laboratory, Hyderabad, has mentioned in his endorsement to the Prime Minister's appeal for a change in food habits, that "One way of promoting a change in dietary habits of our people is to encourage our traditional diets in the original form, which even according to the latest available scientific information, may be considered to be very balanced."

I had the rare privilege of undergoing an eight months course (from February to October 1965) in Food Science and Applied Nutrition in the London School of Hygiene and Tropical Medicine, London University and in Ibadan University (Nigeria). It gave me the opportunity to live with and learn about food habits from representatives from 15 different countries, all of which are developing countries. In London, learning food habits of different nations became an every day obser- international queue at the University Cafeteria, each person waiting to make a selection of food from the display of various dishes laid out, to form a lunch menu nearest his or her own national diet.

The Korean, the Phillippian, the Indian, the Thai and the Taiwan, looked for his rice and curry. He found the food insipid and so he took plenty of chilly sauce. The Korean, the Thai and Taiwan added some

to the soya-bean flavour. Choosing items was very difficult for the Indian vegetarian, because almost every dish had the flavour of meat or fish in it. Some vegetarians had no objection to eggs and there was another who ate fish and yet called himself a vegetarian. The idea of vegetarian and non-vegetarian was peculiar to India and this had to be explained in many places, on many occasions even in the Radio and T.V. Programmes.

Next in the Cafeteria queue came the Muslims from Egypt, Sudan, Iran and Afganistan who looked at the meat dishes and asked suspiciously "Is this pork ?" and took bread, meats other than pork, plenty of fruits and cold salad.

Then came the Cubans, who missed their kidney-beans and fried plantains but were happy with any kind of meat, fruit and plenty of cold salad. Each of them insisted on thick black coffee with no sugar and no milk. What seemed medicine to me was coffee to them !

What about the Nigerian and his companions from Tanzania and Kenya ? They looked for their fried bananas, pounded yam (Iyam), Maize flour (aurala) and Cassava (Eko). These were not there, so they helped themselves to rice and curry, adding plenty of chilly sauce.

In the queue there were the Englishman and the American, too. The American had a long travel down the whole line of dish counters and finally his tray was tightly packed with grape fruit or its juice, soup, large bowl of tomato and cucumber salad, meat or fish dish, vegetable, corn pudding and coffee without milk or tea with lemon. Who would not call this a balanced diet ! The Englishman was particular to have his soup, egg or meat or tomato sandwiches or fish and chips. His diet, too, was balanced but did not look so full and luxurious as the American's.

In general, the main dish for many was meat and fish and not rice or chappati or the yam that the Indian, the Korean, the Phillippian or the Nigerian is used to. We call the former a high protein diet and the latter a high carbohydrate diet and our problem is how to make our high carbohydrate diet into a high protein diet, even without meat and fish. It could be done, I learnt, with our pulses, grams and vegetables and groundnuts ! It was such an eye-opener to find how different, diets can be in different parts of the world and how strong food habits could be. The observation of diets of different countries was a lesson to emphasize, more than ever before, that "Your body is what you eat".

In the practical classes, when each country had to prepare a day's menu for a low-income group, the Indian group demonstrated their own menu. The menu was Idly and Drumstick Sambar for breakfast ; Rice, Radish Sambar, Greens, Butter Milk and Tomato Pachadi for lunch ; Groundnut for snack, and Chappati and Potato [illegible] The calories and other nutrients were calculated and shown that this menu gave the requirement if the low income group family could take such a diet every day.

Special tributes were always paid at the tables to the Indian curries, Chappati and Dhal, Rice and Sambar, Idly, Dosai, etc. Dr. W. R. Azkroyd who was the Director of the then Nutrition Laboratories in Coonoor during 1938-45, later retired from F.A.O. and now Lecturer in Nutrition in the London University often referred in the class to the non-fat dry Chappati (Chukka roti) of India as a wholesome food and which he advocated to all the other countries to learn to prepare and eat.

What the nation eats

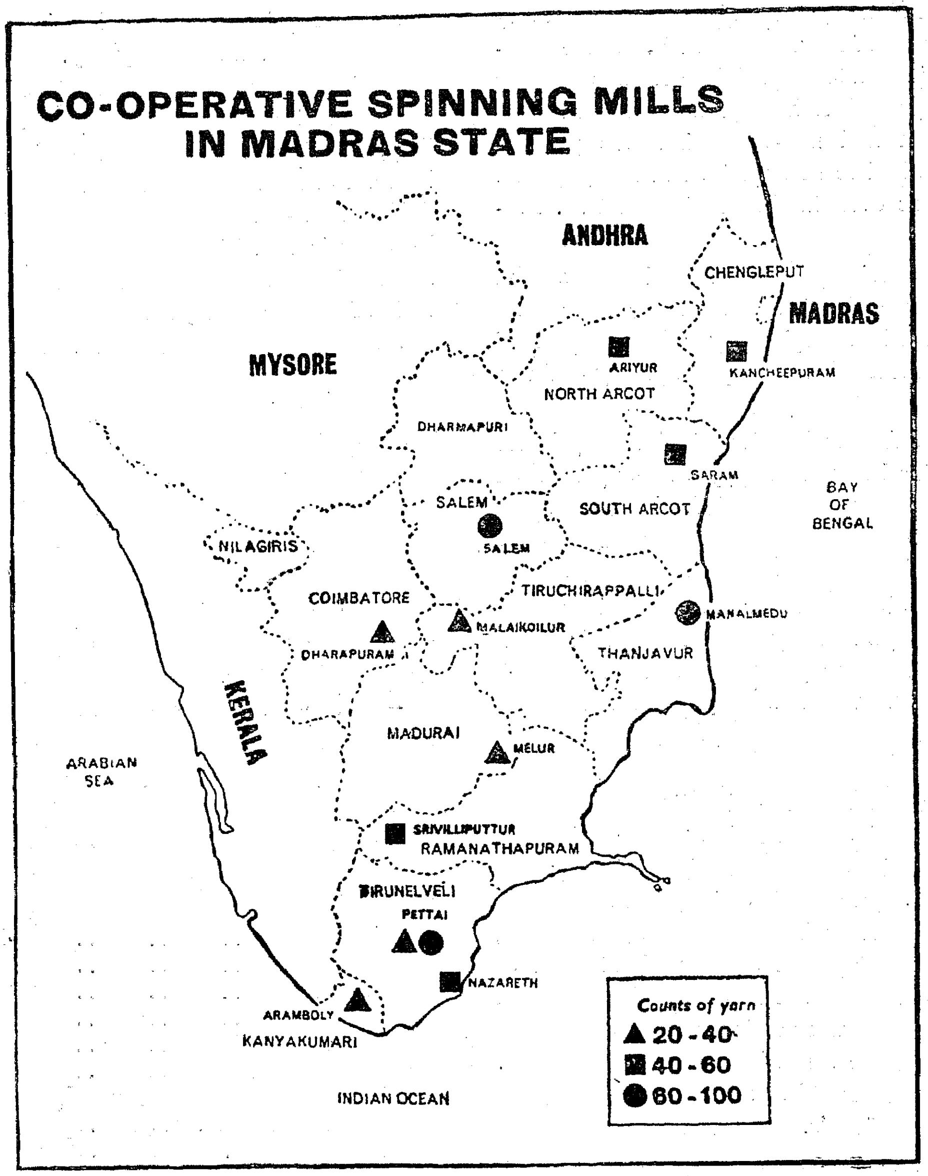
It may be of interest here to know what exactly we, as a nation in India, eat. The following figures are the results of diet surveys done in different parts of India by the National Laboratories, Hyderabad. Let us compare what we eat with what we should eat. Here is what Dr. C. Gopalan, Director of the Nutrition Research Laboratory, has recommended, endorsing the Prime Minister's appeal for a change in food habits.

Average daily consumption of food stuffs for adults

	What we eat. GRAMS.	What we should eat to provide minimum nutrients. GRAMS.
Cereals	470	..
Rice	..	175
Wheat	..	175
Pulses	70	85
Meat, fish and egg	15	28
Leafy vegetables	20	116
Roots and vegetables tubes }		{ 116
Other vegetables. .. .. }	90	{ 85
Fruits	5	85
Vegetable oils	15	28
Sugar and jaggery	20	57
Milk	80	170

Surveys of Indian diets reveal an undue preponderance of cereals partly to compensate against marked absence of protective foods like pulses, milk, vegetables and fruits.

Differences between recommended quantities, availability and the actual consumption is the case not only in India, but in all the developing countries, as was seen from the discussions with the different persons from the different countries in the Nutrition Course of Food Science and Applied Nutrition in the London School of Hygiene and Tropical Medicine. The solutions were improvement in the economy of the country, change in the pattern of production, necessary change in the food habits and allied factors which have to be tackled. In this, everyone in the country has one's role to play, especially when more production for adequate consumption is the burning question of the day.

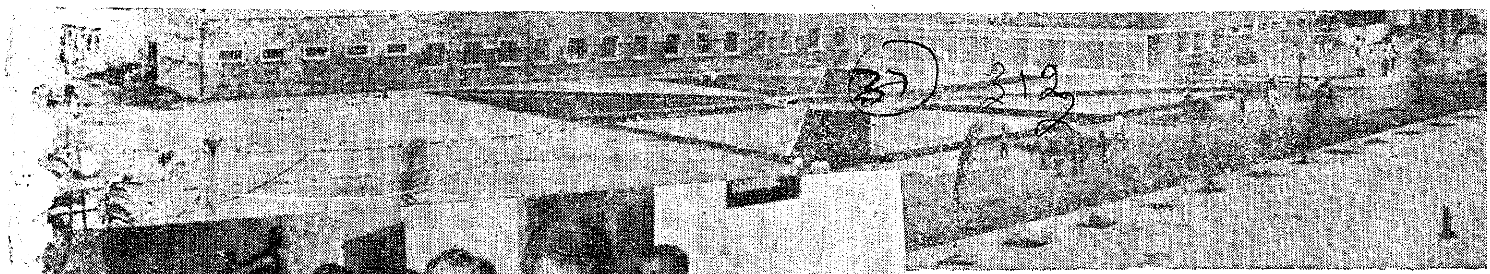


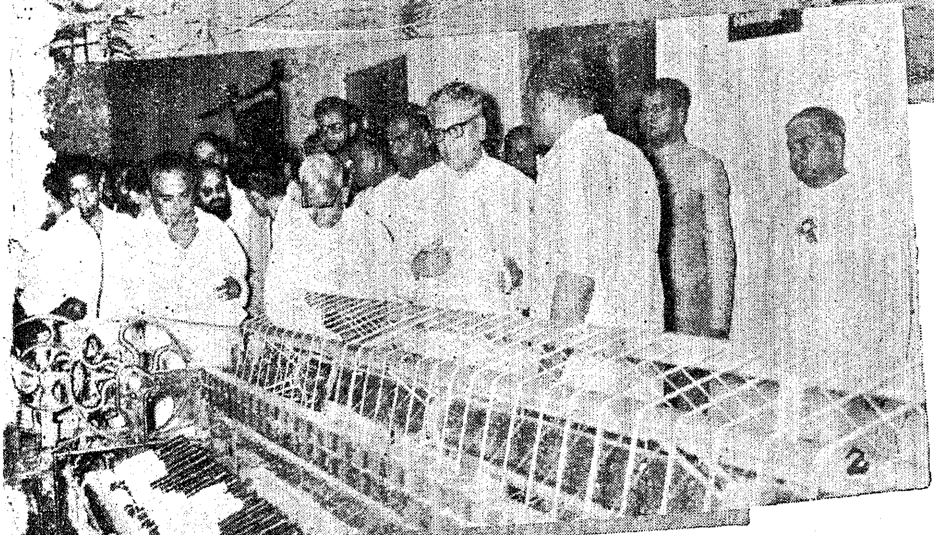
The handlooms of South Arcot district, while few in number, are noted for the quality of their production, particularly of exportable varieties of cotton fabrics like shirtings, lunghis, Bleeding Madras, etc. Of the total 22,476 looms including khadi and half-silk looms and 200 pure-silk looms, 13,455 looms are in the co-operative fold including 125 pure-silk looms. They produce 1·50 crore yards of cotton fabrics and 33,500 yards of silk cloth per annum. The handlooms are covered by 65 co-operative societies. The usual counts of yarn used are 60s and 40s.

The establishment of a co-operative spinning mill in each district is part of an ambitious programme of rural industrialisation embarked upon by the Government with the twin objectives of making available good quality yarn at reasonable prices at all times to the handloom weavers of the district.

With the inauguration of the Co-operative Spinning Mill at Saram, South Arcot district and the second unit of the Co-operative Spinning Mill at Pettai, Tirunelveli district, the Third Plan target for establishing nine co-operative spinning mills has been fulfilled.

CO-OPERATIVE SPINNING MILLS



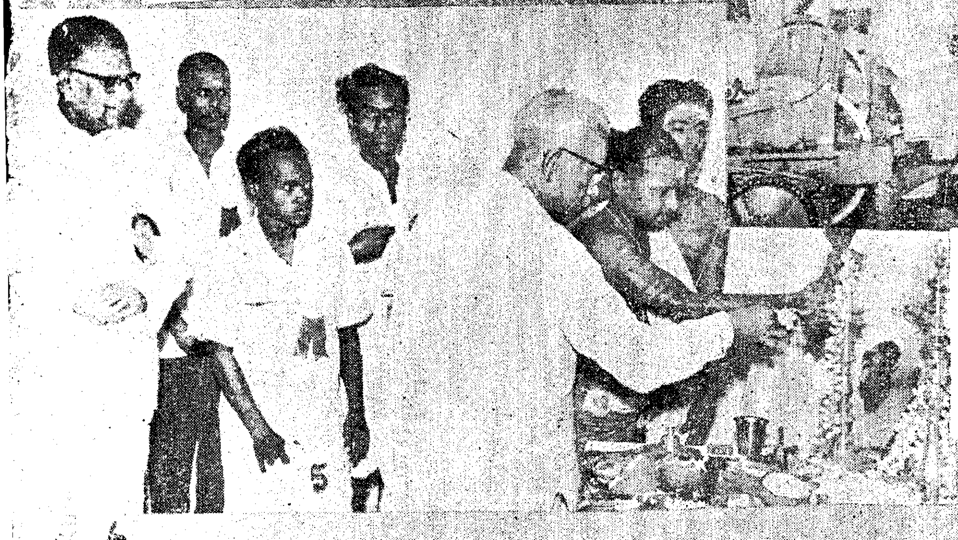


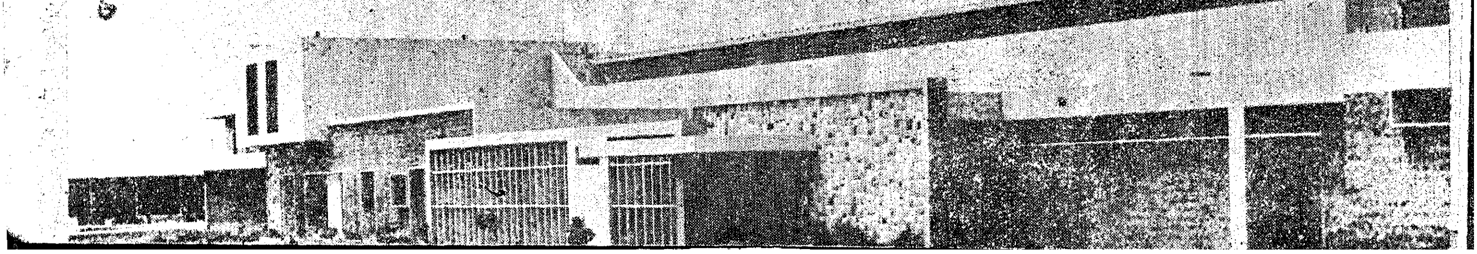
1. A general view of the Co-operative Spinning Mill at Saram, South Arcot district.
2. Sri M. Bhaktavatsalam, Chief Minister, who inaugurated the Mill on 16th July 1966 is going round the Mill. Industries Minister presided. Minister for Information and Publicity inaugurated the godown. They are also with the Chief Minister.
3. Sri R. Venkataraman, Industries Minister, is handing over the first bundle of yarn produced at the factory to Sri P. Nachimuthu, President, Madras State Handloom Weavers' Association.

4 and 5. The second unit of the Co-operative Spinning Mills at Pettai, Tirunelveli district was inaugurated on 17th July 1966. The Chief Minister and the Industries Minister are going round the Mill. The Chief Minister also inaugurated the Mill by lighting a " Kuthu Vilakku ".

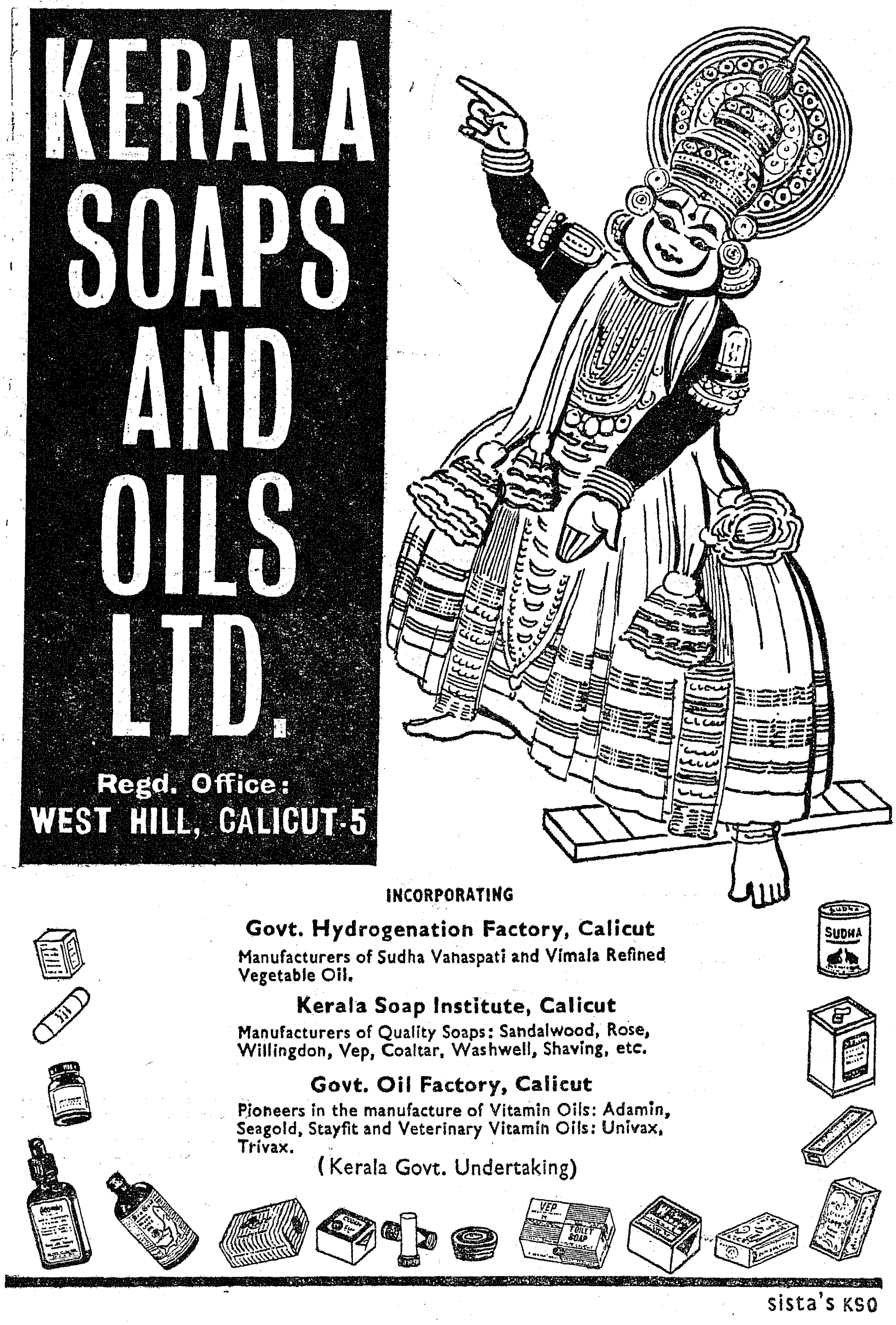
6. A view of the Mill at Pettai, Tirunelveli district.

(*Please also see opposite page*)





Registered No. M-4767



PRINTED BY THE DIRECTOR OF STATIONERY AND PRINTING, MADRAS, EDITED AND PUBLISHED BY THE DIRECTOR OF INFORMATION AND PUBLICITY, GOVERNMENT OF MADRAS.